Sailing Craft

Edwin J. Schoettle

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SAILING CRAFT

MOSTLY DESCRIPTIVE
OF SMALLER PLEASURE
SAIL BOATS OF THE DAY

Edited by

EDWIN J. SCHOETTLE

WITH AN INTRODUCTION BY

A. EDWARD NEWTON

EMBODYING WRITINGS
OF WELL KNOWN SAILORS

Drawings by
HARRY PARKER

THE MACMILLAN COMPANY
1928

EDITOR'S PREFACE

THE title of this book, *Sailing Craft*, must be understood to have something of a double meaning. The book, first of all, presents descriptions of well-known classes of racing boats of the present day—principally in the United States, Canada, and England—but it aims also to touch lightly upon the science (or the craft) of the sailor. Considerable attention, too, is given to the various bodies of water where racing and cruising are popular, and to other subjects which, it is hoped, will be of interest not only to yachtsmen but to all who respond to the call of the sea.

There is great temptation here to ramble on interminably in praise of the delights of sailing, a grand sport which differs so completely from all others, but I realize if I were to do so I would simply be repeating what has been better said by others. I am conscious that my main duty here is much like that of a toastmaster. I must be brief, and I must not "steal the stuff" of those who are to follow.

But there is one feature of sailing which my associates in this work have not touched upon, and since it is one that is very close to my heart I crave the readers' indulgence while I discuss it briefly. The idea of compiling this book was born in the suggestion of a friend, but the actual undertaking was prompted by my love for the sport itself—and by another consideration which seems to me important.

I know of no other sport or recreation which presents such opportunities for the welding of family ties, or that lends such help in the great problem of bringing up a family. In the sailing game there need not be—indeed, there should not be—any equivalent for the "golf-widow."

As for the children, they fairly relish the chance to go out with the "old man" on his boat, and to enjoy the sailing, fishing, swimming and other side lines the use of boats presents.

A small amount of money paid for a fifteen-foot boat for the children to sail in, is the finest investment a man can make. The child soon learns that concentration and application are necessary to keep him out of trouble, and as a consequence he unconsciously absorbs mental training and becomes self-reliant at an early age.

I have frequently seen boys of twelve years of age take parties of adults for a sail, see that everyone is made comfortable, assume full responsibility for everybody's safety, and hand out orders like regular old salts. This sport levels the ages of people, leads to wholesome friendships, makes a knowledge of geography and map reading necessary, presents an opportunity for good healthful exercise, and produces endless subjects of conversation. Although a sailing trip may consume only a few hours' time, the many incidents of it take hours to describe and discuss. It is not necessary to the sailing game for clubs to organize "father and son" affairs and tournaments to get the seniors and juniors to know each other; as a matter of fact it is almost impossible to part them when sailing is the sport or the topic of conversation.

Apropos of the training to be got out of sailing and of the advantage it is to youth, I could not write anything more to the point than a school paper of one of my boys, fourteen years of age, and which is here quoted in part:

"Strange as it may seem, my earliest recollection of sailing was not one of joy, but rather one of fear, fear of flapping sails, of sandy shoals, and sudden squalls. As I grew older, I could understand what caused these conditions and knew how foolish my first terror was.

"One day, when I was about seven years old, Dad took me out sailing in a 'puffy' north-east wind. Soon after we had 'shoved off' a flaw hit us. The boat hesitated, and then 'knocked down' on her side. Not knowing what the trouble was, I ran in the cabin, and grabbed a life preserver. Upon reappearing on deck, I couldn't realize why the others were so calm. Everyone had a laugh at my expense, and I now know how foolish my actions were. It was the first and only time I ever questioned Dad's sure touch on the wheel.

"The need of concentration was my first real lesson. Once when

young and out with a party, I had been given the tiller, and was told to 'tack' in the light wind that prevailed. Conversation in the cockpit about some object on the shore made me turn my head in that direction. During my inattention, the boat started to 'go up' into the wind, and before I knew it we were at a complete stop, having no headway at all. I received a severe calling down, and was told to keep my mind always on the boat. This experience helps me greatly in racing now. I have lately suspected my attention was directed shoreward to teach me a lesson.

"While my experience has been limited, I have had enough to convince me that sailing is a good healthy out-door sport. I am glad it is my Old Man's hobby, and fortunate that it is also mine."

* * * * * * * * *

It should be mentioned that the sport may be enjoyed not only by persons of different ages, but by people of widely different financial means. Boats can be obtained to suit the pocketbook, irrespective of how long or short that may be; and it is also true that the greatest amount of real pleasure is to be obtained in the use of the smaller types sailed without crew or assistance. Besides, well-designed, strongly built, and well-cared-for boats will last for many years, and can always be disposed of at prices that make the cost of ownership very little over the years they were used.

Many of the writers in this book call attention to the great number of years certain well-known yachts have been in commission; and this is interesting, as showing how love and care will preserve a good boat for many years, thus saving the expense of a new investment such as one makes in automobiling and other pastimes.

The study of the background and history of sailing is most absorbing. Sailing today—it is especially interesting to note—contends with the same natural elements as in the primitive days, and with practically the same devices of mind, hull, and sail.

Evidently, however, the teaching of sailing in naval academies is entirely a thing of the past, and we find a striking instance of this in Mr. Lowell Thomas' book, *Count Luckner, the Sea Devil*, just published. It will be remembered that the Count, during

the World War, with a sailing vessel and a handful of men, sailed from Germany, through the English blockade, to the South Atlantic and Pacific, and succeeded there in scuttling twenty-five million dollars' worth of Allied shipping; he also caused untold damage by delaying and hampering commerce. It should not be overlooked that this tremendous task was accomplished without the loss of a single human life. In this book the Count is quoted as saying that after the Battle of Jutland he was commissioned to take command of the sailing vessel because he was *the only officer in the German Navy who had "previous actual knowledge with sail."*

The navy and civilian captains of large ships today are like the owners of pleasure launches, only engineers and sometimes navigators. This phase of sailing has been so well written up by Felix Riesenberg that I am quoting his paper in full:

THE ROMANCE OF THE SEA[1]

Why is it the amateur sailor often waxes so hot with admiration for the sea? Is it because he has never done his four months' passage around the capes, either east or west? Is it because he has never come in from seaward, crusted with salt, aching in mind and body, poisoned with fatigue, his tanks spewing water brown with rust and brackish with decay? Is it because he has never known the pang of ill nourishment and ill usage? I wonder about this. Sailors know too much; deep-water sailors tinge their admiration with a curse.

Here and there, to make a more or less honest living, sailor men have spun yarns of the sea, yarns transcendent with the colors of romance. But have they fully believed themselves, or have they dared tell the terrible truth about the sea?

A navy captain once said to me, "Man is always subnormal aboard ship." This may have been an apt quotation, we were in a West Indian harbor at the time, both come in from sea, or it may have evolved within him out of the bitterness of his experience.

[1] Published by special permission from *Vignettes of the Sea* by Felix Riesenberg. Copyright, 1926, by Harcourt, Brace and Company, Inc.

The modern steamer has done much to change the bright complexion of the sea. Hardships have been smoothed away. No more hundred days at sea and over. Salt junk and weevily tack give way to soggy baker's bread and frozen meat. No more putrid scuttle butts. No more racking watch and watch of labor as when ships worked across the ocean by main strength and skill in handling spars and sails. I might go on through an indefinite list of things no more. The whole process of steam and machinery and steel at sea has been negative. Passages have been shortened; these new elements have constantly taken away from the sea, bad and good, until little but mediocrity remains. "They have made a splendid passage. ONLY FIVE DAYS AT SEA!" How the admirers of such performances love the sea!

The old sailor, lying about the sea, larding it on for the landsman whose appetite for this sort of thing is simply unappeasable, tells half the truth, paring away, or sliding over, the harsh things all deep-water sailormen remember, the things that keep them mute in the glow of great glories and in the memory of mighty moments. Here and there surprising depths of weird wisdom have come up out of the blue sea and confronted the astonished minds of seamen. But, where such knowledge has remained, the price in suffering has been paid.

The steamer and its relentless competitor, the motor vessel, are supposed to be robbing the sea of its horrors, of its hardships; but they are also most thoroughly robbing it of those romantic treasures which alone made the calling of the sea a bearable business, aye, a compelling thing without reason.

The cult of machinery and the romance of steel and steam, following in the narrow wake of McAndrew, lifts a metallic clatter of humor and greasy controversy filled with the smell of wet sweat rags and mental hot bearings. Men confined below decks, within steel bulkheads fore and aft of the engines and boilers, look with contempt upon the poor denatured mariners above, comfortable, sheltered from the wind, and impotent.

So the sea with its refrigeration, its electric fans, its plush upholstery, its five-course dinners following in the wake of

greater gustatory efforts in the saloon, its steam-heated wheelhouses, its insolent deck hands versed in union rules, becomes a soft cage-bird existence utterly devoid of any quality but that of stupid ease. When a pinion breaks and a windlass fails, the metal ark goes ashore unless some other piece of machinery comes to its assistance.

And now the men who turn the wheels shut in amid dust and oil and heat, these men, discontented and morose, claim the old heritage of the sea, the badge of toil and glory, standing before the throne of romance in dirty dungarees. They clamor as being worthy to carry on the burden of the sea. They succeed the grumbling horny-handed victims of the deep-sea voyages, men with wrists and armpits swelling with salt-water boils, men racked with scurvy, with fingers and toes prehensile and bent, the joints knobby with rheumatism, their nails split and broken by pawing icy sails on tough topgallant yards in fifty south. These men with crooked legs, short distorted bodies, great gorilla arms and parchment faces, look back out of their dead experience, a cruel, cold glint in deep-set eyes, a curl of disdain in wide nostrils, sniffing ghost-like over the black pan, the cabin leftovers, sitting on the gratings of the fireroom.

Once sailormen looked upon kids of cracker hash and bilious bags of duff as luxuries. The forms under the slush lamp of a ghostly forecastle, white with hoar frost, laugh discordantly as they hear the stall-fed stokers swear and curse the sea.

"We had to SING at our work."

Great God! They HAD to sing. And the figure of the Bucko Mate, belaying pins in his short boots and knuckle dusters on his fists, comes back out of the past not as an adjunct to morbid romance, but as a cruel fact. He broke men and killed them on the cruel blue sea without the aid of fire.

Men at sea once lived like felons in a den, rotten with scurvy, drawing their whack of salted beef and pork, fished from greasy harness casks each noon. They took their pannikins of tepid brackish water and bowed and trembled before

cruel masters under alien skies, denied even the rude justice that, in those days, hung a man for stealing bread.

The snarling lash of the cat once cut across bare backs and men were hung up by their thumbs. Aye, the old scuppers of ships ran red with outrage. But harsh as the sea was in its relationships between men it still held virgin pleasures not yet spoiled by millions of smeary hands. Life was hard like the diamond and in the polishing became a sparkling flame. Little, very little, but wisdom remained when a man came in from sea, and in his wisdom and to save his soul, he kept his memories dark.

* * * * * * * * *

If Felix Riesenberg has left you a little disconsolate and has shattered an idol you liked to dream about, then read what Gordon K. Seagrove has written about the matter under discussion:

If you need a diversion of another sort—something with a tingle in it when you want a tingle, or peace when your soul cries out for peace—something that carries with it constant change and endless variety, what you want is sailing; what you ought to have is a sailboat. And now is the time to begin looking for one if you hope to be clear-headed and well-muscled next summer.

You will experience what no other sport with the possible exception of hunting, can produce—that feeling of complete and utter detachment from a drab and dusty world that comes when blue water is all about you. Again, you will find your spine a-tingle when you have beneath you a lean, lovely thing of wood and snowy canvas, racing along through the cool water, the white foam crinkling and gurgling at the rail, going where you want her to go, leaping to your touch, and trusting to your skill as a fresh breeze whistles out of an indigo sky into the bellying sails. Back there, behind you are the office, the sunbaked streets and the quivering heat; ahead, only the cool and changing water and the distant shore—and the day to yourself!

There are the breaking dawns on the gray water when the

loons call and the light over the compass pales, and the amateur helmsman peers into the lifting mists for the first sight of the landfall. There are the serene, sunny days when your craft slides lazily along the bluest of seas, almost sailing herself while you lie upon your back counting the little scudding clouds and forgetting that your pipe is out. There are the moonlit nights, mystic and unreal, when your little vessel seems like an ethereal butterfly suspended between earth and sky, yet moving always toward the distant blinking beacon on the dark horizon; from forward of the mast comes the sound of singing by those too glad of the night to sleep, and from the dimly lighted cabin the chimes of the ship's clock sounding the watch call to men who yesterday, perhaps, were lawyers or financiers, but who now are sailors. And there are still other nights when the clouds swing low and the towering seas moan for miles behind you, while your crew, huddled on deck, eye the shortened canvas and wonder if so small a barque can triumph over the booming seas and make the port where rest and friends and sweethearts are. Those are the days you taste content. Those are the nights you sample life!

INTRODUCTION

THE editor of this book, Mr. Edwin J. Schoettle, an experienced yachtsman, has asked me to write a brief introduction to his volume, *Sailing Craft*. It gives me pleasure to comply with his request, chiefly for the reason that it is one of the many subjects of which I know nothing: I never rowed a boat, much less sailed a yacht, in my life. I shipped once as ballast and lay on my belly and let the sea wash over me for hours at a time, moving myself a few inches to the right or left, forward or hindward, according to instructions, and every time I raised my head to see what was doing I was told to look sharp, we were about to jibe. It was a thrilling experience, and I do not care to repeat it.

A certain wise man—I think it was Solomon—once remarked that there were four things which were too wonderful for him: they were the way of an eagle in the air, the way of a serpent upon a rock, *the way of a ship upon the sea*, and the way of a man with a maid. The men who have written these sketches believe, no doubt, that they are wiser than Solomon: it is for a yachtsman to judge.

One thing I know: in sailing a boat, as in everything else, there must be no divided responsibility. Two men went sailing once, and disagreed: one was in the bow, the other in the stern. The man in the bow objected to the way the boat was being steered. "You manage your end and I'll manage mine," said the man at the wheel. "Very well," said the man at the bow, "I intend to anchor my end." And he did.

Personally, I esteem a yachtsman. If I thought I could pass as one, I would gladly don well-fitting white duck trousers, a double-breasted dark blue serge jacket, and a yachting cap—just as I occasionally appear at hunt breakfasts, booted and spurred, in amazingly cut breeches, and a pink coat with tails—but I deceive no one: the apparel oft proclaims the man, but not in my case.

INTRODUCTION

I have always believed the yachtsman to be a particularly high-toned sportsman: his work is done in the open where it can be seen by all men. In sailing a boat, skill will tell: "the leading boat gets the wind," of course, but it takes skill to put your boat in the lead and keep it there; and perhaps, though you may be in the lead from start to finish, you do not win the race: there is such a thing as time allowance—all life is like this.

We, Americans, fancy ourselves as exceedingly keen business men: I think we over-estimate our abilities in this direction, and we do not sufficiently take into account the unequalled opportunities which are ours. We take business too seriously, and have our playing done for us. We affect football, we call it our national game, but in proportion to the millions who watch football games and talk about them, how many of us play them?

To thoroughly enjoy a sport, a man must himself be a sportsman. No doubt, there is joy in talking sport, but you can't learn to sail a boat either by conversation or correspondence. All the aid that a book can give you these papers are designed to supply. I end where I began. Mr. Schoettle is an experienced yachtsman: his peers have told me so. He wins races—and loses them, and keeps his temper—this is important. "Let the best man and the best boat win." This is a good motto: if you can think of a better, let me hear from you.

A. Edward Newton.

CONTENTS

	PAGE
American Yacht Racing—*William U. Swan*	1
The Sport of International Racing—*Sir Thomas J. Lipton*	21
Symposium on the Question of Classification	24
One-design—*F. T. Bedford*	25
Open Classes of Racing Yachts—*Thomas D. Bowes, M.E.*	30
The Value of Restricted Designs in Racing Yachts and Descriptions of the Classes—*J. Murray Watts, N.A.*	31
The Value of Racing Boats of Different Dimensions by Handicapping—*G. P. Granbery*	37
The International Star Class—*G. W. Elder* and *Ernest Ratsey*	41
Sound Inter Club Class—*William W. Swan*	58
Class R Sloops—*J. W. Streeter*	68
American Catboats—*Edwin J. Schoettle*	87
Canoeing under Sail—*Maurice D. Wilt*	109
Ocean Racing in Small Yachts—*Samuel Wetherill*	137
The Story of the Fastnet Race—*Maurice Griffiths*	155
A Landlubber's Log—*J. Fletcher Street*	181
The Bugeye of the Chesapeake—*Peter C. Chambliss*	198
Transatlantic Racing—*William U. Swan*	216
New York Forties and Fifties—*Lewis Kleinhans*	229
The West Solent Restricted Class Yachts—*Maurice Griffiths*	244
Yachts of the Netherlands—*Gerald T. White*	256
Ten-Metre Class—*Clifford D. Mallory*	277
Larchmont "O" Class—*Edwin J. Schoettle*	285
Biography of Mr. William Gardner—*Francis Sweisguth*	291
North American Yacht Racing Union—*Clifford D. Mallory*	318
Sails—*Edwin J. Schoettle*	325

CONTENTS

PAGE

THE AËRODYNAMICS OF YACHT SAILS—*Edward P. Warner* and *Shatswell Ober* 340

THE TOMS RIVER CUP—*Commodore Edward Crabbe* 366

THE GREAT LAKES OF THE UNITED STATES AND CANADA—*Edwin J. Schoettle* 375

YACHTING AT CHICAGO—*Donald F. Prather* 381

SAILING AT DETROIT—*Dr. A. F. Jennings* and *J. F. Whitehead* . . 405

YACHTING ON LAKE ONTARIO LOWEST AND LOVELIEST OF THE FIVE GREAT LAKES—*C. H. J. Snider* 419

SAILING ON LAKE ST. LOUIS, MONTREAL, CANADA—*Alex S. Poe* . . 436

TAFT CUP CATBOATS—*F. G. Luderer* 450

CANADIAN DINGHIES—*T. B. F. Benson* 457

LAKE ST. LOUIS YACHTS—*G. H. Duggan* 466

BILGEBOARD SCOWS—*Edwin M.* and *T. M. Chance* 483

SAILING AT LAKE GENEVA, WISCONSIN—*Ernst C. Schmidt* . . . 502

THE FOURTEEN-FOOT NATIONAL DINGHY CLASS—*Bruce Larkins Atkey* . 509

YACHTING ABROAD—*Gerald T. White* 527

CRUISING IN BRITISH WATERS—*Maurice Griffiths* 545

THE MAJOR YACHTS—*Bennett Fisher* 560

DURBAN SHRIMP CLASS—*Alexander Anderson* 571

Q CLASS YACHTS—*Edwin J. Schoettle* 574

THE NEW YORK THIRTIES—*Edwin J. Schoettle* 579

SIX-METRES IN AMERICA—*Edwin J. Schoettle* 589

BARNEGAT BAY SNEAK BOXES—*O. G. Dale* 599

FIFTEEN-FOOT SNEAK BOXES AND JUNIOR SAILING ON BARNEGAT BAY—*Charles E. Lucke, Jr.* 612

THE JOY OF CRUISING—*W. E. Warrington* 627

CRUISING NEW YORK TO MAINE—*Cornelius Vanderbilt, Jr.* 635

SOUTHERN CALIFORNIA YACHTING—*Edson B. Schock* 644

MAINE AND NOVA SCOTIA RACING—*Edward W. Madeira* 656

"THE QUEST OF THE CUP" (Races of the Gloucester Fisherman Type Boats)—*James B. Connolly* 670

CONTENTS

PAGE

THE SCHOONERS OF BILOXI (Mississippi, U. S. A.)—*Gerald White* . . . 691

SMALL BOAT RACING AT MARBLEHEAD, BUZZARD'S BAY, AND NEWPORT—*William U. Swan* 700

SAILING AT SEATTLE—*Nard Jones* 706

MODEL YACHT BUILDING—*Charles Z. Klauder* 715

THE YAWL—*William M. C. Kimber* 725

THE DARK HARBOR SEVENTEEN AND ONE-HALF FOOT CLASS—*Robert E. L. Johnson* 729

THE ATLANTIC CITY CATBOATS—*William Wood* and *Bennet C. McNulty* . 734

ICE BOATING—*Edwin J. Schoettle* 743

GREAT SOUTH BAY SHORE BIRDS—*William A. Gill* 756

THE ALDEN "O" BOATS—*Dwight S. Simpson* 761

HISTORY OF THE VICTORY CLASS—*T. S. Clark* 768

DUTIES OF A REGATTA COMMITTEE—*Benjamin Adams* 776

SALTY TALK—*Edwin J. Schoettle* 782

SAILING CRAFT

AMERICAN YACHT RACING

A Brief Record of the High Lights on Sailing Competitions
Between 1845 and 1927

By William U. Swan

THAT the dawn of civilization found human beings, on the shores of sea or lake, venturing out on a couple of logs with a leafy bough as a sail seems quite reasonable. While there is no record that the first maritime nations built boats for strictly recreation purposes, we have fairly accurate knowledge that the Phœnicians, Greeks and Romans scudded about the Mediterranean, and that Cleopatra floated down the Nile in a barge that was neither a warship nor a merchant vessel and which must, therefore, have been what we would now term, a yacht.

All through the subsequent centuries, kings, queens, and noblemen found relaxation in craft that were variously named. It was not until the middle of the seventeenth century that the Dutch, in a temporary spirit of good will toward the English, sent some delegates to Charles II in a couple of their North Sea privateers, which they called "yats," a name which has ever since been applied to boats used solely for pleasure.

But vessels built for such seemingly selfish purposes had little vogue in the western Atlantic for the first two hundred years of the colonies, for Americans were too busy doing their share of the world's work to find time for vacations afloat, or for races in jaunty craft such as their English cousins had.

Yet when prosperity did come through marine activity and adventure, some of the most successful merchants—especially those who commanded ships—turned once more to the sea for the mere pleasure of sailing. Among the first was George Crowninshield of Salem, Mass., whose Cleopatra's Barge, designed and built by his fellow townsman, Retire Becket, is rightly regarded as the first of American yachts.

New York merchants and business men were not long in following the lead of Salem and Boston; in fact one of the pleasing developments in the sport has been the long continued and friendly rivalry between the yachtsmen of these shipping centres.

One pleasant afternoon in July, 1844, a number of yachtsmen gathered in the cabin of the little schooner Gimcrack, owned by

Picture from an old print

THE FIRST AMERICAN YACHT (1816)

Brigantine Cleopatra's Barge, built by Retire Becket for George Crowninshield of Salem, Mass. Mr. Swan considers this boat the foundation of American yachting.

John C. Stevens, and formed the New York Yacht Club, which became the premier organization in the country. New Orleans followed three years later, but it was not until 1866 that the Boston Yacht Club came into existence.

Commodore John C. Stevens, the first commander of the New York Yacht Club, a member of a very remarkable family, may be regarded as the father of American yacht racing. Under his

YACHT AMERICA (1851)

Length 101 feet overall. Designed by George Steers and built by William H. Brown at the foot of East 12th Street, New York City. This boat's history will never be duplicated. She sailed to England in 1851, and won the famous English Cup, has sailed under the flags of three different governments, and is today a nautical museum at Annapolis.

leadership the club held its first cruise to Newport a few days after the organization, and the next year, on June 15, 1845, projected its first regatta in upper New York Harbor, in which six schooners and three sloops sailed over a short course for a sweepstakes cup.

About this time the wonderful speed of American packet and clipper ships, principally through daring sail carrying, had placed the country in the front rank of maritime nations; and, having taken up yachting, the leaders in the sport soon became imbued with a desire to match their pleasure craft with those abroad. The result was the sending to England of the schooner yacht America in 1851 and the capture of the Royal Yacht Squadron cup valued at 100 guineas, which afterwards became the America's Cup, the leading challenge trophy of the world.

The America was a 170-ton schooner, designed by George Steers and built at the yard of William H. Brown at the foot of East 12th Street, New York. She was 101 feet overall, 90 feet on the waterline, 23 feet beam and 11 feet draft, with decidedly raking masts, a foresail without a boom, and a single but very large jib.

We cherish the recollection of how she defeated a fleet of seventeen English yachts in a race 'round the Isle of Wight on August 22, 1851.

Between 1870 and 1920 interest in the yachting world centred largely in the numerous, but unsuccessful attempts by British yachtsmen to regain the America's Cup. In that period there were thirteen matches of one, two, three, four, and even five races each, or a total of thirty-one contests in which the British challengers won only three.

The nearest approach to victory by the British was in 1920 when Sir Thomas J. Lipton's fourth Shamrock won the first two races, only to drop the other three.

In addition to stimulating yachting competition, the races for the America's Cup also inspired experiments and improvements in design and rig, and brought to the fore such naval architects as Edward Burgess of Boston, Nathaniel G. Herreshoff of Bristol, R. I., and William Gardner of New York, in America; and William Fife, Jr., George L. Watson, and Charles Nicholson in Great Britain.

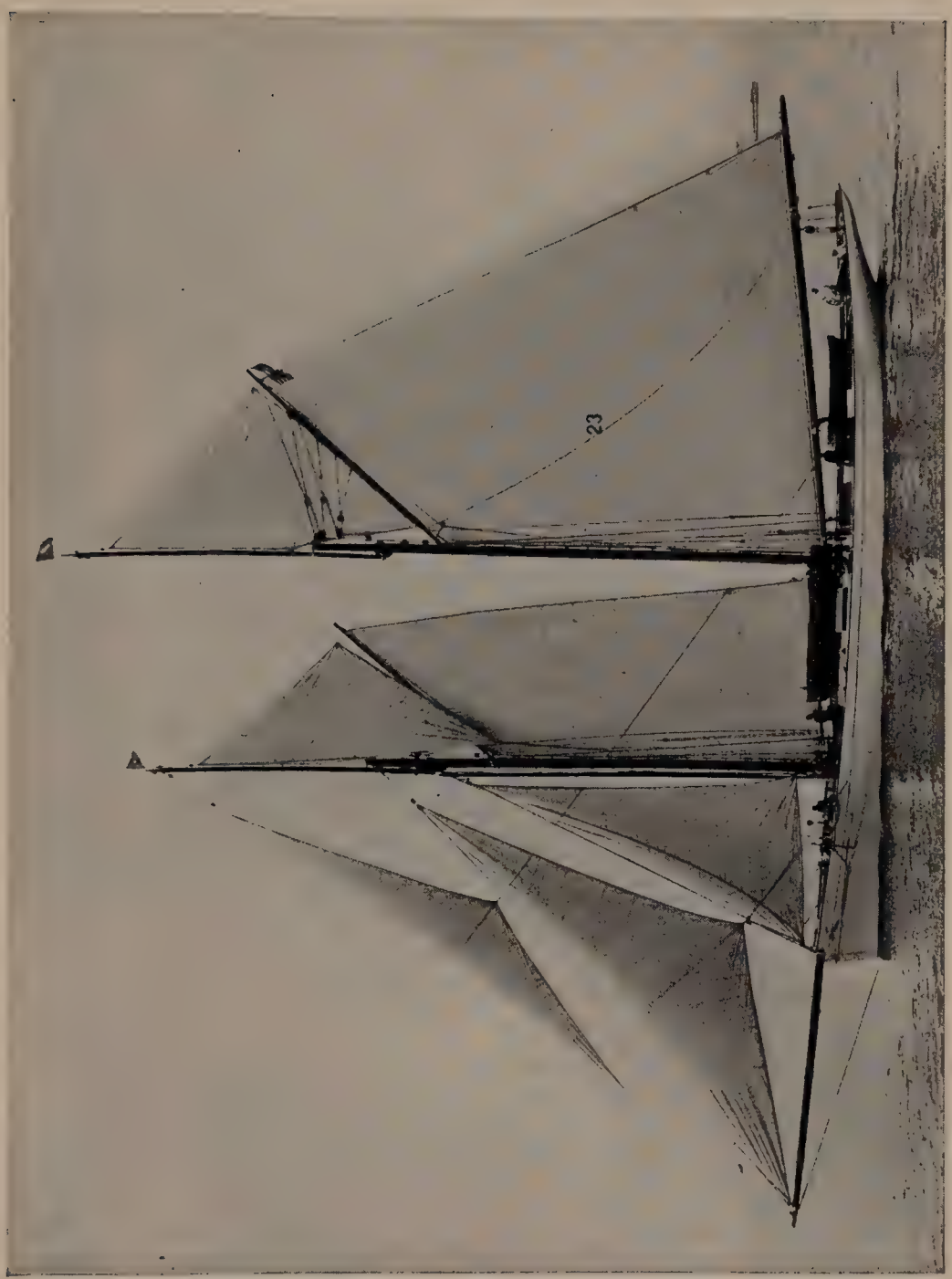


Photo by Rosenfeld

SCHOONER PURITAN (1885)

Boston's most noted defender of America's Cup. Her radical design established a new era in yacht racing

The following is a list of the winners and losers in the thirteen matches for the America's Cup:

	Winners	Losers
1870	Schr. Magic	Schr. Cambria
1871	Schrs. Sappho & Columbia	Schr. Livonia
1876	Schr. Madeleine	Schr. Countess of Dufferin
1881	Sloop Mischief	Sloop Atalanta
1885	Sloop Puritan	Cutter Genesta
1886	Sloop Mayflower	Cutter Galatea
1887	Sloop Volunteer	Cutter Thistle
1893	Sloop Vigilant	Sloop Valkyrie II
1895	Sloop Defender	Sloop Valkyrie III
1899	Sloop Columbia	Sloop Shamrock I
1901	Sloop Columbia	Sloop Shamrock II
1903	Sloop Reliance	Sloop Shamrock III
1920	Sloop Resolute	Sloop Shamrock IV

Second only to the matches for the America's Cup in yachting interest were the four trans-Atlantic contests for large schooners between 1866 and 1905.

The first of these stirring events was a match of $30,000 a side between James Gordon Bennett's Henrietta, Pierre Lorrilard, Jr.'s, Fleetwing, and George and Franklin Osgood's Vesta, sailed in December, 1866. All three yachts encountered typical North Atlantic winter weather and the Fleetwing lost six men in mid-ocean. The Henrietta, on which Mr. Bennett sailed as the only owner in the contest, was the first to finish, although the smallest boat of the three.

In the summer of 1870 the English schooner Cambria, in the first quest for the America's Cup, was matched against James Gordon Bennett's schooner Dauntless in a race from Queenstown to New York. The English yacht won by a very close margin of 1 hour and 12 minutes, her time being 23 days, 5 hours, and 42 minutes.

Seventeen years later the Dauntless, then carrying the colors of Caldwell H. Colt of New York and again an aspirant for trans-Atlantic honors, once more met defeat in a race from New York to Queenstown. This was in March, 1887, and the winner was Robert

T. Bush's schooner Coronet, which sailed the distance in 15 days, 19 hours, and 3 minutes, with the Colt yacht nearly a day astern.

In 1905 the German Emperor inspired an international trans-Atlantic contest from New York to Cowes for an imposing silver cup (which subsequently proved to be plated instead of solid), and

AMERICAN SLOOP, KATRINA

Picture of an old model from book of photographs published by N. L. Stebbins in 1889. The book from which this photograph was taken contains the pictures of all the best yachts on the Sound in 1889. It is interesting to note that all boats photographed were of either plumb stem or clipper bows.

eleven yachts carrying American, British, and German flags started from Sandy Hook lightship on May 17. The three-masted schooner Atlantic led the fleet to the Needles by nearly a day and made the distance in 12 days, 4 hours, and 1 minute, a record which no yacht before or since, either in a contest or racing singly, has approached.

From an old print

THE START OF THE FIRST OCEAN RACE IN 1866

Left to right the yachts are: Henrietta, Vesta, Fleetwing. As the result of a more or less friendly bet, these boats were sailed from New York in the dead of winter (Dec. 11) with the finish line at Cowes, England. The Henrietta was the winner, although all three entries finished within a few hours of each other.

The yachts with their owners and times in the German Emperor's ocean race were as follows:

				Days	*Hours*	*Minutes*
Am.	Schr.	Atlantic	Wilson Marshall	12	4	1
Ger.	Schr.	Hamburg	A. Tietjens	13	2	6
Brit.	Schr.	Valhalla	Earl Crawford	14	2	33
Am.	Schr.	Endymion	George Lauder, Jr.	14	4	19
Am.	Schr.	Hildegarde	Edward R. Coleman	14	4	33
Brit.	Bktn.	Sunbeam	Lord Brassey	14	6	23
Am.	Schr.	Fleur de Lys	Lewis A. Stimson	14	9	33
Am.	Yawl	Ailsa	Henry S. Redmond	14	11	10
Am.	Schr.	Utowana	Allison V. Armour	14	11	51
Am.	Schr.	Thistle	Robert E. Tod	14	19	29
Am.	Bark	Apache	Edmund Randolph	18	17	3

While these great contests were being sailed by the largest and the fastest of the racing fleet, American yachts of all sizes were competing for other attractive trophies. During his term in office Commodore James Gordon Bennett, of the New York Yacht Club, offered several prizes for major yachts, the most noteworthy being the Brenton Reef and Cape May cups for long distance races. After several contests, both cups were carried off to England by the cutter Genesta, after her defeat for the America's Cup, but were recovered some years later by the sloop Navahoe and the schooner Atlantic.

In 1882 Ogden Goelet, of New York and Newport, offered two cups,—one for schooners and the other for sloops of the New York Yacht Club for annual races off the famous summer resort. These events were continued by Col. John Jacob Astor and by his son, Vincent Astor, now commodore of the club. Up to the present year forty-one of these events have been held.

The New York Yacht Club also became the custodian for another trophy, given by King Edward VII of England for a regatta for all yachts over 50 feet waterline. The cup, which was of gold, was returned upon his death in 1911, but the next year his son, George V, sent another one. The King's Cup is held permanently by the New York Yacht Club, a replica being given to each winning yacht.

The leading trophy for major yachts in Massachusetts Bay is a silver tankard, which the sloop Puritan won in a Goelet Cup race

in 1885 and which was presented to the Eastern Yacht Club as a perpetual cup to be sailed for in the club's annual regatta at Marblehead.

The names of forty winners are inscribed on the tall cup, which is at present in the possession of E. Walter Clark of Philadelphia, who won it in 1927 with the schooner Resolute. The winners of this cup are as follows:

Puritan	J. Malcolm Forbes	1886
Mayflower	Charles J. Paine	1887
Volunteer	Charles J. Paine	1888
Quickstep	Frederick Grinnell	1889
Merlin	W. H. Forbes	1890
Gosoon	G. C. and C. F. Adams, 2d	1891
Wasp	Archibald Rogers	1892
Harpoon	G. C. and C. F. Adams, 2d	1893
Mayflower	William Amory Gardner	1894
Marguerite	Henry W. Lamb	1895
Constellation	Francis Skinner, Jr.	1899
Athene	William O. Gay	1900
Athene	William O. Gay	1901
Amorita	Thomas M. McKee	1902
Meemer	Roland C. Nickerson	1903
Athene	William O. Gay	1904
Heron	Walter I. Badger	1906
Avenger	Robert W. Emmons, 2d	1907
Onda II	John Greenough	1908
Adventuress	Chester C. Rumrill	1909
Adventuress	Chester C. Rumrill	1910
Elena	Morton F. Plant	1911
Avenger	Henry L. Maxwell	1912
Elena	Morton F. Plant	1913
Shimna	Robert T. Paine, 2d	1914
Dorello II	George L. Batchelder	1915
Irolita	E. Walter Clark	1916
Olympian	B. Devereux Barker	1920
Barbara	Frank C. Paine	1922
Squaw	John S. Lawrence	1923
Mystic	Philip R. Mallory	1924
Queen Mab	Nathaniel F. Ayer	1925
Lenore	Robert Amory	1926
Resolute	E. W. Clark	1927

Photo by Rosenfeld

SCHOONER ATLANTIC (1904)

Winner of German Emperor's cup in the ocean race of 1905 from New York to Cowes, with a trans-Atlantic record of 12 days, 4 hours, and 1 minute

While it is possible to fix with approximate accuracy the origin of yachts of large size and to record the races in which they engaged, it is difficult to trace the similar stages of development in smaller types of racing craft. Races for small boats started soon after the organization of the New York Yacht Club, and in those early days the most popular of the small boats were the Whitehall in New York, the Catboat in Massachusetts and especially Cape Cod, and the Hiker on the Delaware.

Races for purses or cups became very popular after the Civil War, and have increased rapidly and spread broadly until, at the present time, every summer finds regattas in hundreds of bays and inlets between the Chesapeake and the Passamaquoddy, as well as throughout the Great Lakes, on many smaller bodies of fresh water, and on the Pacific Coast; while in the last few years small boat racing has become a fixture in the winter season in the South and in southern California. The leading centres of small boat racing for many years have been Marblehead, Mass., and Larchmont, N. Y.

The conduct of small boat racing followed along the same lines as the larger craft, with numerous material incentives of which the Seawanhaka Cup, placed in competition in 1895, is perhaps the most widely known. This trophy, given by members of the Seawanhaka-Corinthian Yacht Club of Oyster Bay, N. Y., was offered first for what was known as half-raters, boats of 15 feet waterline and 200 square feet of sail-area. The first challenger was the English boat, Spruce IV, which was defeated by the American yacht Ethelwynn, designed by William P. Stephens, an ardent canoeist, a designer of some note and in later years the leading authority on yachting in the world. The next year a Canadian challenger, Glencairn, carried the Seawanhaka Cup to Montreal, where it remained until 1905, when the Manchester, a Boston production and designed by Edwin A. Boardman, brought it back to the United States. It remained in the possession of the Manchester, of the Massachusetts Yacht Club, for nearly twenty years, being captured in 1922 by the little Scotch 6-metre boat Coila III and carried across the ocean. After successfully defending it against two European challengers, the Coila III was defeated in

KATOURA, LARGEST SLOOP IN AMERICA

1926 by the American yacht Lanai, which returned the Seawanhaka Cup to its original donors. Its homecoming, however, was short, for in 1927 the Norwegian yacht Noreg took it again across the Atlantic.

Another noteworthy international small boat series was inaugurated in 1906 through the efforts of Henry Howard of Boston in matches between American and German craft of a special design, commonly known as sonder boats.

These were boats whose waterline, beam, and draft did not total over 32 feet, carrying not over 550 square feet of canvas and weighing not less than 4,036 pounds.

The first match was sailed at Marblehead and was won by the American boat, Vim. The next year three American sonders visited Kiel and a German boat won. Before returning, the American stopped at San Sebastian and sailed a series with the Spanish sonders, in which one of the latter came off victorious. The Germans returned in 1909 and again an American yacht, the Joyette, won, but the Teutons drew up even by taking the 1911 series at Kiel. In 1910 the Spaniards came to Marblehead and were defeated, and the Germans returned in 1913 for the last time and once more the American yacht, Ellen, captured the cup. In these series the American cups were named in honor of Presidents Roosevelt, Taft, and Wilson, while the German Emperor and King Alfonso XIII were the donors of the trophies in Germany and Spain.

Up to 1896 all yachts were of different design, so that races were not only a test of the ability of the helmsman and his crew, but of the naval architect, the rigger, and the sailmaker. It was N. G. Herreshoff who projected the idea of placing a premium on what might be termed skippership and sail handling by building a fleet of duplicate yachts with exactly the same rig and carrying the same amount of sail, in other words, a one-design class.

It took some years to popularize this phase in the yacht racing game, but in 1915 racing in one-design boats far exceeded any other form of the sport, especially in smaller types; and when yacht racing was resumed after the World War, the only open classes in the country in smaller boats were the 30-, 25-, and 20-raters, as

measured under what was known as the American or Universal rule.

In 1922, however, another international small boat series was inaugurated by Guy Lowell, a Boston yachtsman, in a type known abroad as a 6-metre boat, an open-class yacht designed under the European or international rule of measurement. Five contests, between teams of four yachts each, were sailed with Great Britain,

Reproduction of a painting dated 1834, showing a schooner entering Bermuda Harbor. The sails in every respect resemble the present day Marconi Rig, years ago referred to as Bermuda Rig. The canoe in the foreground is interesting.

and after both countries had won two home series, the British team vanquished the Americans in the fifth, sailed in Long Island Sound in 1925.

The 6-metre boat found special favor among Long Island Sound yachtsmen, and in 1926 the Lanai was sent abroad and returned not only with the Seawanhaka Cup, but with the Scandinavian Gold Cup, which had never before left European waters. In 1927 seven nations, England, Norway, Sweden, Finland, Denmark,

Holland, and Italy, challenged for the Gold Cup, and the Swedish yacht, Maybe, captured it after a long drawn out series. Before it was sailed, however, the Noreg had secured the Seawanhaka Cup.

While the personal equation in yacht racing is not quite as high as in other sports, with the exception possibly of horse racing, certain figures cannot be ignored in the record. Among the leaders should be mentioned Capt. "Dick" Brown, who sailed the America to victory; Charles Barr, a native of Scotland, whose skillful handling of the Columbia and Reliance turned back two Shamrocks, and whose intrepid skippership drove the Atlantic to glory in the German ocean race; Charles Francis Adams, for the past twenty years the acknowledged head of all American helmsmen, amateur or professional; and C. Sherman Hoyt, second only to Adams, and the winner of the Seawanhaka Cup in 1926. Hundreds of others trailed out astern.

Perhaps the most successful effort of Americans in encouraging international one-design racing was the projection of a little square-sided knockabout called a Star boat in 1911 in Long Island Sound. The type gained world-wide popularity and by 1927 there were thirty-one fleets with a total of 475 boats scattered about in different yachting corners of the globe, all interested in the annual championship events. The 1927 title contest for Stars brought twenty-five yachts to Narragansett Bay, with a Newport Harbor (California) boat, the Tempe III, carrying the trophy to the Pacific coast. The success of the class was due to the energetic efforts of George A. Corry, of Port Washington, N. Y., who is called the father of the Stars.

The Great Lakes, both on the American and Canadian shores, also joined in the racing game, with various types and a number of challenge cups; and by 1920 the Pacific coast was well organized and races for both large and small yachts were being held almost as frequently as on the Atlantic side of the continent.

In 1921 the younger generation of yachtsmen received their first recognition in the establishment by the Eastern Yacht Club, of Marblehead, of the Massachusetts Junior Yacht Championship, in which the sailing abilities of boys and girls under eighteen years of age were tested under a unique system of supplying them with

Photo by Rosenfeld

SLOOP RELIANCE (1903)

Tenth defender of America's Cup with mainsail containing 8,600 square feet of Double O duck, the largest sail ever cut. Probably the speediest sailing vessel in the world.

unfamiliar boats of one-design, matching them in pairs and having them sail the best two out of three races under the tournament system, changing boats after each race.

Junior championships were soon inaugurated in Long Island Sound and Narragansett Bay, with the winners in those two events going to Marblehead to compete for the cup offered by Commodore Herbert M. Sears, each crew representing a yacht club.

The clubs winning the junior championship, with the crew captains, were as follows:

1921	Pleon Y. C.	Richard S. Thayer
1922	Larchmont Y. C.	Arthur W. Knapp, Jr.
1923	Duxbury Y. C.	Raymond Hunt
1924	Pleon Y. C.	Harry B. Thayer
1925	Duxbury Y. C.	Raymond Hunt
1926	Duxbury Y. C.	John Wilbur
1927	Pleasant Bay Y. C.	C. Ashley Hardy

While harbor or bay racing in lightly built and rigged yachts maintained its popularity, American yachtsmen ever and anon turned back to the olden days when staunch boats and intrepid skippers braved the tempestuous seas of the North Atlantic, when tests of deep sea seamanship and navigating abilities came into vogue through the efforts of Thomas Fleming Day, a yachting writer and amateur sailor of remarkable attributes. Through his efforts, races for staunch yachts of moderate size were inaugurated in 1907 with a dash across the Gulf Stream to Bermuda, and these events soon became more or less of a fixture in the yachting scheme. To foster offshore sailing the Cruising Club of America was formed in 1924 and soon its white pennant with its blue wave began to appear on American yachts in the far north and abroad. Nor were the yachtsmen on the Pacific coast to be left astern by their Atlantic brethren; numerous races were held to Honolulu and even as far as Tahiti.

Another yachting organization with a wide field of endeavor came into being through the formation in 1925 of the North American Yacht Racing Union, comprising nearly all the leading clubs on the continent. One of the first acts of the new Union was an effort to bring about an agreement between the European and American

Photo by Rosenfeld

SCHOONER ADVANCE (1924)

Owned by John S. Lawrence, whose triangular staysails revolutionized the style of canvas on schooner yachts

measurement rules for racing yachts. At the end of the two years some progress had been made in that direction, while in addition the Union encouraged the formation of such European racing classes as the 12-, 10-, 8-, and 6-metre divisions.

The high sportsmanship manifest in the races at Oyster Bay in the fall of 1927 for the Scandinavian Gold Cup leads to the belief that not only European and American yachtsmen, but Asiatic, African, and Australian sailing amateurs will eventually gather at a yachting Locarno and harmonize their differences in the measurement and racing rules.

THE SPORT OF INTERNATIONAL RACING

By Sir Thomas J. Lipton

THE greatest pleasure in racing for the America's Cup is trying to do what no one else has succeeded in doing, namely, to take back that famous trophy to the Old Country of its origin.

As everybody knows the cup was taken from England by the schooner America in 1851 and although it has been raced for many times since, and by myself four times, yet it still remains in the custody of the New York Yacht Club who hold it by deed of gift.

I have, however, no intention of giving up hopes that some day I may have a yacht that will beat my American friends and thus realize my lifelong ambition.

After Scotland had made an attempt with Thistle, and England was no more successful with the Valkyries, I thought it was only right that Ireland should try its luck; so I raced with Shamrock I in 1899 and again in 1901, 1903, and 1920 with Shamrocks II, III, and IV, respectively, and although unsuccessful on each occasion I am still, after thirty years of trying, willing to make another effort. Whenever my designer thinks he can build me a winner, I am prepared to issue another challenge and I am hopeful that this will be possible this year.

The friendly rivalry of international racing, be it between large or small yachts, is a thing that should be encouraged and this is also one of the ideals that prompts me to stick to my task, for it is my earnest desire to see America and Europe to (particularly Great Britain) draw closer together, and in my opinion no sport can lend itself better to this than yachting.

Having been brought up on the banks of the Clyde, during my boyhood I naturally got a taste for boats and boating. When I had worked hard and made some success in my commercial life (helped greatly in this by my early experience in America), I

The Finest Boat Sir Thomas Built

determined, when I had a little leisure, to have a yacht of my own; and I thought a racing yacht would be the best to get the maximum amount of pleasure out of the sport.

It is almost a matter of history today to look back upon my first Shamrock with which I tried without success in 1899 to regain the cup; but I am told I won then a far greater prize than the cup when I gained the appreciation and the respect of the American people, which I prize beyond everything.

In this connection I may say I have always found my American opponents thorough sportsmen who play the game, and I state without hesitation that I have always been beaten by the better boat.

I am glad to see that international yacht racing is coming into favor among the younger yachtsmen of America and Europe, and especially in the 6-metre classes; and I hope the friendly rivalries will long continue, for there is no more wholesome sport than yacht racing.

Still the "Blue Ribband of the Seas" remains in America, but I hope it will not be long before I take it away and give it a look at the Old Country again. I am sure, however, that if I do succeed in winning it, my American yachting friends will not let me have it for long. Whenever we do race again and I hope it will be soon, I will still say, as I have always said, "may the best boat win."

SYMPOSIUM ON THE QUESTION OF CLASSIFICATION

EDITOR'S NOTE.—We present herewith a symposium on the question of the comparative merits of each classification of racing yachts. To obtain close competition, boats when racing are divided into the following:

A—Single design.
B—Restricted design.
C—Different design raced with handicaps.

The writers of these papers are well known in yachting circles. Mr. Bedford has been the owner of many yachts and an enthusiastic sailor for over thirty years. Messrs. Watts and Bowes are marine architects and the work from their boards and the sailing they have done are known everywhere. Mr. Granbery is the father of the handicap class on Long Island Sound. All four writers constitute a quartet well qualified to handle the subject under discussion.

The racing of boats should accomplish several things in addition to giving pleasure to the contestants.

1. Make competition as close as possible.
2. Find a use for old boats as well as new ones.
3. Endeavor to meet the possibilities of owners of many different financial standings.
4. Develop and encourage the work of marine architects.
5. Encourage the initiative of owners and designers.
6. Provide opportunities for the use of vision and imagination to secure development and promote evolution.
7. Advance the science of sailing with its consequent improvement in the speed and construction of boats.

It will, no doubt, be taken for granted that a well-balanced sailing equipment should include a boat for cruising and another separate type for racing. Most attempts to cruise in craft designed for racing result in failure and in many cases deprive both departments of sailing of their pleasure. How and when may a sailor,

fond of cruising, find time to indulge in a trip to distant waters if he is compelled to keep his yacht ready for competition each week? In other words, cruising boats used for racing are usually stripped of the thousand and one things necessary for a voyage, which means a vast amount of preparing for one or the other branches of the sport, consuming a lot of time and effort. It will be noticed that the same arguments used by the various writers to promote the class in which they are interested are used by other writers to depreciate the class in which they are not interested.

I am personally of the opinion that the one-design class is the only type that should be used by children and beginners. A better designed boat would be a bad influence, but when all competitors have the same model the beginner learns at an early age the necessity of skill and the value of carefully conditioning his craft and crew. For the older sailors who have been through, and are done with, the early stages of development, the best class is the——— who knows? Gentle reader, decide this for yourself.

ONE-DESIGN

By F. T. Bedford

That fabulous race between the hare and the tortoise, the one reported by Æsop in the "Ancient Greece Sporting Blætter," has had a lot of publicity, but at the time it did not draw much of a gallery. You'll never stir up much popular furor in a race between a wolfhound and a dachshund.

But when the legs of the racers measure equally, then you have a race, and in my humble opinion the future of yacht racing as a popular sport depends on the promotion of the one-design class principle. One-design races, with proper class restrictions, never fail to produce keen competition. Competition is the essence of sport and there is no sense in sport without competition.

In open class races competition often gets to be a matter of outbuilding the other fellow. The trophies usually land on the mantlepieces of the boys with the plumpest pocketbooks. Matching pennies is sport, of course, and pounding away at the other fellow's bankroll also offers a certain zest, but it is pastime for

purple plutocrats and when the rest of us go in for it we generally come out on a shutter.

It is as expensive as the pastime of that old Tartar chief whose idea of a lovely time was to have his slaves drive an elephant over a precipice so he could watch it bounce down the cliff side.

Photo by Rosenfeld

SEWANHAKA CORINTHIAN CLASS SCHOONER, NADJI
A very popular and useful type

In other words, outbuilding competition is too expensive for most yachtsmen to enjoy over any great period of time. If yacht racing is to grow more popular and if the yachting population is to have a normal, healthy future, the one-design idea will be its line of development.

I make this statement from the background of my own experience and from my observation of the trend in racing matters. The first boat I ever raced, a catboat, was so far out of the running, it usually finished among the leaders of the following race.

Then I had a catboat built for me by Herreshoff. Its name was Wanda, and it became quite a famous name. This second catboat of mine was built so well that after a while I had to put a rope through the centreboard and agree to drag along a load of scrap iron before I could get anybody to race me.

As one fellow expressed it, the Wanda made junk out of hundreds of Long Island Sound catboats. The Merry Thought, built by Herreshoff for John P. Crozier, of Philadelphia, about 1900, worked the same havoc, I understand, in Barnegat Bay. Catboat racing had to be dropped from the list of events because the result was foreknown as soon as the Merry Thought reported at the starting line.

Nobody minds being beaten in competition where conditions are equal for the competitors, but who will voluntarily enter a race in which he is licked before he spreads a sail?

As another argument for the one-design idea, I might cite my Q-boat, the Eleanor. She furnished good racing for two seasons, then new interpretations of the rules permitted building larger boats in the Q-class and poor Eleanor was through as a racing thoroughbred of the briny turf.

In the old days the best competition I experienced was in the race-about division, a restricted class, which enjoyed popularity on Long Island Sound about 1900. They were a one-design 18-foot class, too.

One-design boats cost less because they are built in quantity. Lower cost means a greater number of contestants, and more contestants mean a better race, more glory if you win, and less disappointment if you don't. The one-design principle means also less depreciation, for your racer is not going to be outbuilt next year or the year after. You don't feel you have to race her every day while she is new so as to squeeze in all the competition possible before she gets out of date.

In the open classes today, the cost of building puts the boat on

the plane of the custom-built automobile body, a luxury in which comparatively few can indulge themselves.

As examples of the success of one-design racing I would cite the New York Thirty-footers and the Star Class. The Thirty-footers are comfortable boats with a good turn of speed. They are competing today as actively as when they were built, about twenty-five years ago.

The Star Class lists nearly 500 registered boats from designs prepared by William Gardner in 1911. They are of moderate cost, are distinctly racing machines, and when they get together for a sprint they make a greater degree of real sailing competition than those of any other yachting class I know. Some of these Stars are owned by men who could afford much larger craft, but they are real sportsmen and they want to stay where there is racing competition for them to enjoy.

Existing racing rules cover two classes of boats which can be included under the one-design principle. First, there is the actual single-design or one-design construction, by which all boats are built in the same mould, as it were, and are identical in every last respect.

Then, also, there is what is called the Restricted Class, in which all boats are held to certain limitations. In the old race-about division on the Sound they restricted the waterline length, the overall length, and the sail-area, but the boats were allowed to vary as to keel or centreboard or a combination of both. They might also vary in width and in some other details.

I would not call the 6-metre boats built under the International Rules a restricted class, nor the R class built under the Universal Rules, for in both cases the individual boats vary a great deal. I would call them open classes, although perhaps this differs with the terminology now in use in national racing circles.

Classification as to rig and overall length, and time handicapping can make to some extent a close race out of an event in which these boats of widely varying construction are entered, but I believe the results are never as satisfactory as when a flock of one-designs heads off together from the starting line with the same wind, the same sea, and the same mechanical equipment.

Photo by Levick

ACADIAN

One of the boats that races in the Handicap Class on the Sound

From the spectator's point of view there is no comparison. From the owner's point of view, he gets a hundred times more competition per dollar of expenditure. And from the point of view of the sport as a whole, the one-design system will draw more and more recruits to yachting circles and more and more members to yacht clubs and more and more new clubs each year.

OPEN CLASSES OF RACING YACHTS

By Thomas D. Bowes, M. E.

Keen competition is always the incentive that leads to the development of the best in everything. Yachtsmen, yachts, and yacht racing are no exception.

The one-design class mania that swept this country a few years ago was responsible for killing a very great deal of enthusiasm for yacht racing. The revival in yacht racing that has taken place lately has been due to the fact that yachtsmen have gone back to building yachts in the various classes.

A one-design class removes all the incentive to develop or improve the hulls and their equipment, as no changes are permitted in such classes. While in a rule class, a yachtsman is allowed to accomplish the desired result in many different ways and all that is necessary is that the measurements and restrictions of the class be lived up to. This permits him to experiment with different types of hulls, sails, spars, etc., to improve all the desired qualities that are needed.

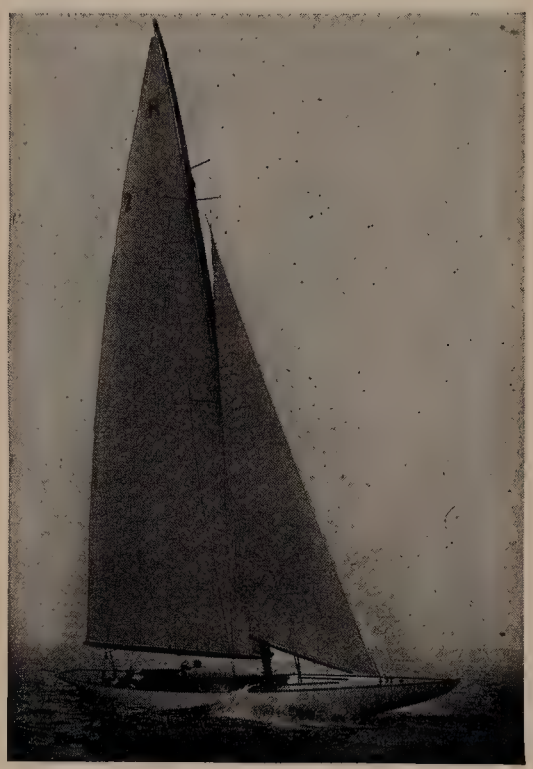
If this country is to go ahead in the designing and building of racing yachts, the naval architect must be given a chance to develop by designing boats in keen competition with the best designers in the world. The lack of this development in the past, due to one-design classes, can be seen in the pitiful performance of our 6-metre boats in 1927, when pitted against the foreign sixes.

The enthusiasm dies down fast in one-design classes with the probable exception of the very small classes, where the matter of cost is the only point taken into consideration. These classes are usually sailed by the younger people, who look on them as a step to something better.

The New York Yacht Club thirties and forties are the only larger one-design classes that have survived for any length of time. While in the rating classes, such as the "Rs," "Qs," and "Ps," we see new boats built into them every year and the older boats improved every year.

Another advantage of the rating classes is that a man can take a boat from one part of the country to another and race her in her class. One-design boats, with the probable exception of the Star boats, are confined to special local waters.

On the inland lakes and now, Barnegat Bay, we see the Inland class A, B, and E survive year after year and new boats built into the classes, many of different design.



CHAMPION R CLASS KNOCKABOUT GOSSOON

THE VALUE OF RESTRICTED DESIGNS IN RACING YACHTS, AND DESCRIPTIONS OF THE CLASSES

By J. MURRAY WATTS, N. A.

Modern sailboat racing has been developed along two separate lines, in one of which the boats are built to restricted designs, and the other, where all the boats are exactly the same kind.

There are several advantages from this last point of view, the chief one being that it is the cheapest way to build a class. Another is, that each contestant having practically the same boat, the winning yacht must depend chiefly on the skill of the crew, and also to a certain extent on the care that the crew gives the set of the sail and to the smoothness of the underwater body.

However, among many yachtsmen, there is a strong feeling that

the sport gets greater encouragement from racing boats built to certain restrictions, and to have these boats turned out by different designers, each one living up to the rules, but employing the result of his experience in an individual design to fulfill the given conditions of the class.

It would seem that there is an added interest to yacht racing, when the experience of former years is embodied in the improved design of boats for each new season. Only in this way is progress assured.

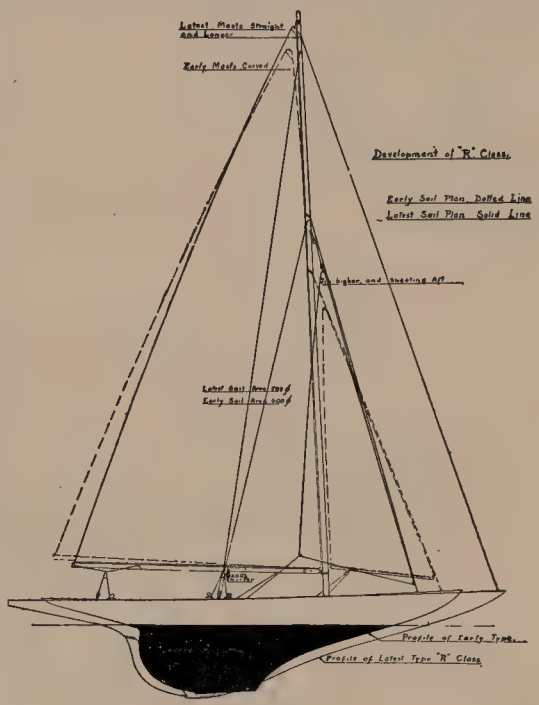
One very prominent class in which a tremendous development occurred was that of the racing sloops built for the America's Cup. It is true that the expense of this type of racing was enormous, but it was undertaken by men who could well afford the cost, and the development of improved designs by both American and foreign designers was very rapid, and was of the greatest value to yachting in general. This constructive competition among the designers produces a very healthy rivalry in all the popular restricted classes. Among these might be mentioned the "O," the "P," the "Q," and the "R" class, under the Universal Rule; and the 6-metre, 8-metre, 10-metre, and 12-metre class under the International Rule.

In strong contrast to these types of boats could be mentioned the "Star" class, which is a one-design proposition, and in which there has been no improvement in model of hull or layout of sail-plan in the last seventeen years. In fact, some of the oldest boats have still remained among the most successful. The old saying that "competition is the life of trade" is equally true in yacht racing and yacht building.

Referring more especially to the small classes, it is interesting to note the wide variation in the length and beam in recent boats of the "R" class, and the 6-metre class respectively; not only that, but the shape of the sails, the proportions of the spars, the rake of the masts, have varied so greatly, that some of these boats seen racing together seem hardly to be in the same class. Nevertheless, they all conform with the restrictions of the rules. These rules are intended to produce a boat of good sea-going ability, and to keep away freak features, such as excessive overhangs, and dangerously

low freeboard. The strength of the construction of the hull is insisted on; as otherwise the builders might be tempted to construct very light hulls and then put the weight saved into the lead ballast to get sail-carrying ability at the expense of sturdy construction.

Several startling innovations in "R" boat design were employed last year in the Live Yankee designed by Francis Herreshoff, with a spar holding the staysail instead of the stay, which sail was made very large in comparison to the mainsail; and the use of a stream-lined mast fitted to revolve and changes its angle to the wind on each tack. Even the hull was unusual, having a canoe stern. Boats of the "R" boat class vary considerably in length, but the following data are representative of the class: Length overall 38′, length waterline 24′, beam 17′ 8″, draft 5′ 4″, displacement 8,500 lbs., lead ballast 4,500 lbs., sail-area 609 sq. ft.



This drawing shows how R boats have changed in rig dimensions. Designers originally created—large sails (600 sq. ft.) short sturdy hulls (35′–22′ x 6″–8′–5′ x 4″). The initative, allowed designers by the rules, has produced faster boats of entirely different models. The later boats are rigged with smaller sails (550 to 580 sq. ft.) and the hulls designed to be more easily driven by making them longer and sharper (42′–27′ x 6″–7′ x 8″–6′). The study of aerodynamics has created a regular revolution in shapes and sizes of sails. Drawing by J. Murray Watts.

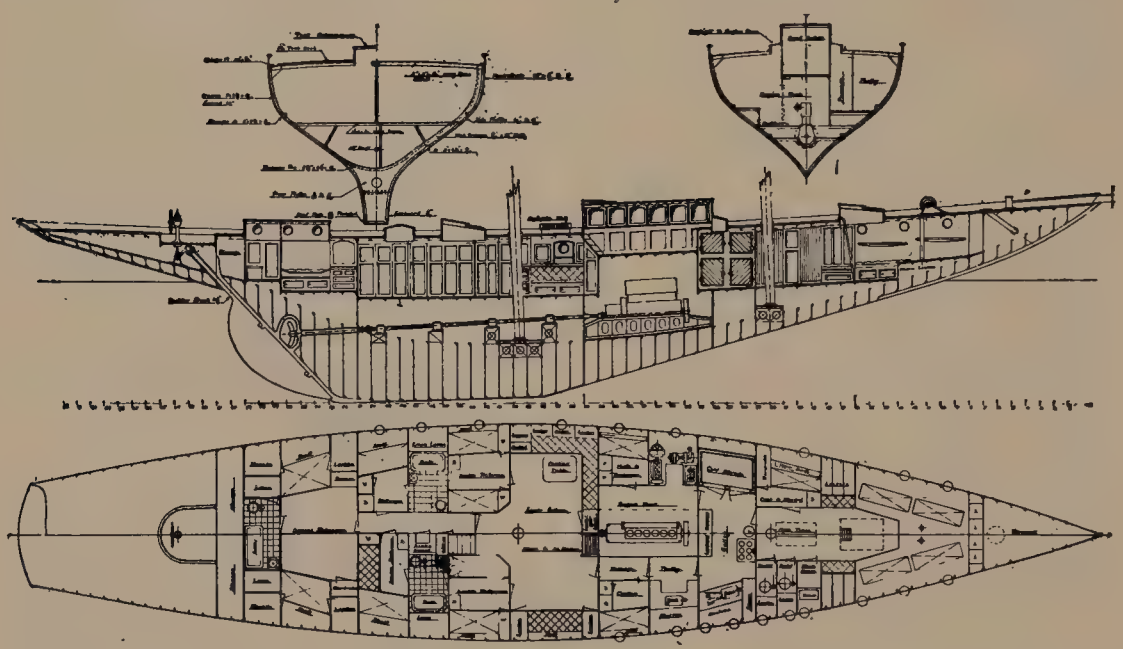
The "Q" boats are large enough to have cruising accommodations on approximately the following dimensions: 46′ 6″ x 26′ x 8′ 9″ x 5′ 11″, sail-area 930 sq. ft.

The next largest size is the "P" class, having a liberal amount of deck room, for afternoon sailing, and comfortable accommodations for four people under a narrow trunk cabin. The dimensions are 54′ x 33′ x 10′ 2″ x 6′ 10″.

With the "O" boats the size is enough to give a separate double

stateroom aft, and a large comfortable saloon amidships, and, owing to the depth of the hulls, the head-room is good through most of the boat. The dimensions are 59′ 9″ x 38′ 6″ x 12′ x 7′ 10″, with sail-area of 1,670 sq. ft.

Turning now to the class of large boats, such as the big two-masted schooners, racing with the New York Yacht Club, and other prominent clubs, the development of new and efficient rigs, such as the Marconi-Staysail rig, have added to the speed of



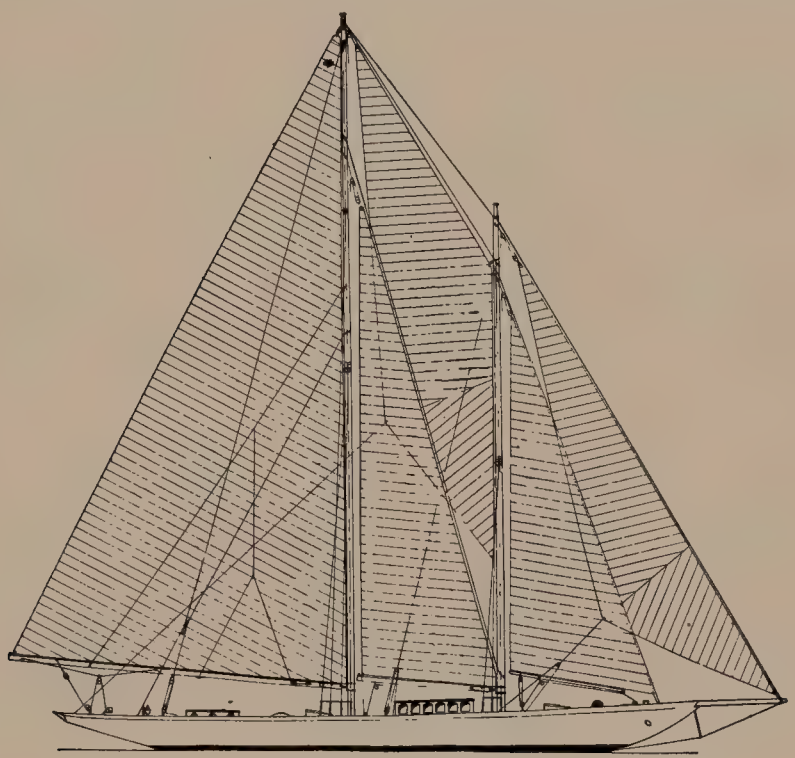
SCHOONER FAIRWIND—ARRANGEMENT PLAN
Designer, J. Murray Watts

these craft, especially in windward work, and their good points have been put to advantageous use in the design of cruising schooners.

As an example of the larger type of racing sloops, the plans are shown of a 75′ waterline yacht, which I am now designing for a New York yachtsman. This boat has a length on deck of 114′, length of the waterline 75′, beam 19′ 10″, draft 13′ 7″, with a displacement of 100 tons and 8,132 sq. ft. of sail-area. The plating is of bronze which insures a very smooth underwater body. The gaff-rig was adopted as being better all around for a yacht this size,

and having the advantage of the shorter mast than the Marconi, so as to pass under the Brooklyn Bridge.

The European or International Classes are becoming increasingly popular in this country, owing largely to the very successful racing between English, Spanish, Scandinavian, and American 6-metres in recent International Contests. This rule lays special stress on



142-Foot Schooner Fairwind—Sail Plan
Designer, J. Murray Watts

seaworthy models of comparatively large displacement and high freeboard.

As the characteristics of some of these boats may not be generally known, a few of them are noted here. For instance, in the 12-metre class which is very popular, especially in England and France, the boats are about 70′ overall, 43′ waterline, 12′ beam, and 8½′ draft. They carry about 1,950 sq. ft. of sail, displacement 21 tons, and have accommodations for a crew of four men, three being the minimum requirement under the class rules. They also have room

for a double and single stateroom, and a saloon and galley. These boats will rate under the Universal Rule a little over 38′, enough to get them into our class "M."

The 10-metre boats have the following dimensions: 58′ 8″ x 36″ x 10′ 5″ x 7′ 5″, displacement 28,750 lbs., and sail-area 1,402 sq. ft.

The 8-metre boats are 47′ 8″ x 30′ x 8′ 4″ x 6′ 4″, sail-area 815 sq. ft.

A representative 6-metre boat is 33′ long x 22′ x 6′ 6″ x 4′ 9″, displacement 6,600 lbs., lead ballast 4,000 lbs., sail-area 490 sq. ft.

The accompanying cuts show my plans of a 6-metre boat, designed for A. M. Punnte, of the Havana Yacht Club. These show a boat with a rather straight sheer, moderate ends, and sharp sections, so as to be easily driven in rough sea. As Havana Harbor is full of driftwood and the steep rocky shores shut off the wind to a great extent, Havana Races take place in the open ocean off the Maleccon, and the combination of the Gulf Stream and the Trade Winds kick up a lively sea.

In designing a racing sloop to meet these conditions, a heavy-weather boat was decided on as the logical model. Through competitive racing designs turned out by various Naval architects, the most successful type for these waters will be finally developed. For racing on the smooth waters of Long Island Sound, with the lighter breezes that are prevalent the greater part of the yachting season, a different type of 6-metre boat, somewhat shorter on the waterline, and with greater sail-area, would probably prove more effective.

It is natural to conclude that this constant experimenting with the idea of producing the best possible boat under varying conditions will eventually result in the development of an all-weather boat, which will combine the good points which have been laboriously developed through years of competitive effort.

THE VALUE OF RACING BOATS OF DIFFERENT DIMENSIONS BY HANDICAPPING

By G. P. Granbery

The Handicap Yacht Racing Class was organized in 1906 under a system devised by my father and myself, the former acting as handicapper and the other original members of the committee being H. A. Jackson, Dr. A. E. Black, and Dr. Palmer.

The membership increased consistently until a fleet of forty odd boats was registered in the class, with the numbers diminishing during and immediately following the war, but within the past few years reaching a total of thirty-five. There would be many more at the present time were it not for the fact that nearly all new yachts built in the past ten years have been one-design—and many of those formerly racing in the class have ended their usefulness, and available ones suitable for handicap racing have grown more scarce.

The system we devised has worked satisfactorily for twenty years—providing during this time interesting and enjoyable racing for many boats that otherwise would have no opportunity to compete with any chance of winning. The class was immediately recognized by all the clubs and later by the Yacht Racing Association of Long Island Sound, which now awards season championship medals for boats that compete under these regulations; besides being successful in various yachting centres throughout the United States and Canada. Of course the best results are obtained when a fairly large number of boats race consistently throughout a season, in which case the percentages soon arrive at a fair and proper handicap.

The class is open to boats of any size or rig; and it is subdivided into groups according to their approximate relative speed. Those other than the scratch or fastest boat in each division receive an allotted percentage of the fastest elapsed time in each race. Percentages of entries that race are changed after each race according to their performance.

A new system was tried out last year (1927) which arbitrarily adds ½ of 1% to each boat except the winner, and second place

boats are penalized 1% and ½ of 1% respectively, thus simplifying the work of handicapping and giving more satisfactory results.

This class of racing boats has succeeded on the Sound and on Barnegat Bay in bringing into competition divergent types, of different ages, and has produced a use for boats that would otherwise be of practically no service. The system of handicapping

YACHT WALRUS
Racing in Handicap Class, Long Island Sound

guarantees victories of some kind or other to nearly all entries, keeps men interested in the sport, and leads to the building of better boats, thus advancing the game.

The rules for handicapping as incorporated in the yearbook of the Association for 1926 are as follows:

"The Executive Committee shall, prior to the opening of the racing season and prior to the first race day in August, classify all yachts belonging to members in good standing in divisions according to their relative size and speed; and shall establish percentage

handicaps for all yachts which, in their judgment, will place them on equal footing, no handicap to exceed 10%.

"All yachts sailing other than scratch shall receive as a time allowance, their allotted percentage of the fastest elapsed time made by any yacht in their division.

"In each succeeding race the winner in the last race shall retain the same handicap; the second yacht shall receive ½ of 1% addi-

YACHT KALMIA
Racing in Handicap Class, Long Island Sound

tional handicap; yachts that did not start and yachts that started, but did not finish, shall receive ¾ of 1% additional handicap; and yachts that finished, but were neither first nor second, shall receive 1% additional handicap.

"In races in which there were but two starters the second yacht shall receive 1% additional handicap for the next race. Handicap figures shall be kept reduced to scratch in each division.

"In arbitrary handicaps, if an error is shown, it may be rectified

at discretion of Executive Committee before third race in which the boat competes.

"No sails other than working sails and spinnakers will be allowed, except when ordered by the Executive Committee—in which case a written notice shall be sent to each member—but the spinnaker sheet may be carried around head stay and lee shrouds.

"No yacht shall make any change in hull or sail-area, after being handicapped, without notice to the committee.

"A boat in any of the divisions of the Handicap Class shall, in the event in her not finding a competitor in her division at the starting line, automatically drop back to the division next behind her until she finds a competitor; except in the case of the lowest division, in which case a boat of this division, not finding a competitor, goes up into the division ahead. The proper differentials between the divisions will in these cases be applied by the official handicapper of the class."

THE INTERNATIONAL STAR CLASS

By G. W. Elder and Ernest Ratsey

IN all the varied interests of mankind today the trend is towards Internationalism. National boundaries, by virtue of transportation's annihilating war against time, can no longer restrain industry, commerce, thought, and the long list of human activities, within their limits. Sports of all sorts are becoming more internationalized with every passing year, and in the realm of yachting, the Story of the Future is undoubtedly written in the Stars.

The International Star Class, the largest organized class of one-design racing yachts in the world, has 34 organized fleets, more than 500 registered yachts, with an average increase of between 80 and 100 new boats each year, and is represented in both North and South America, in Europe, Asia, and Australia. Only in dark Africa is there no Star unit as yet. It is well said that "the sun never sets on the Stars."

Yachting can hold its head high in the world of sports, for the first international sportsmen were yachtsmen. The ancient Olympic Games were national, not international. The modern international Olympics have been a twentieth century development.

Today tennis, golf, rowing, polo, cricket, and almost every other sport of every land, as well as the free-for-all-nations Olympics, can boast of some international feature. But when the America

Photo by Levick

STAR BOATS EN MASSE

This shows some of the Stars just after the starting gun at Larchmont on Long Island Sound, during race week

met and mastered the crack yachts of Merrie England on August 22, 1851, she was the pioneer of a new era, the first internationalist.

When nations matched prowess in ages past, it was on the field of carnage or in naval battle. There was a hint of internationalism in the gladiatorial games of high Rome, where captives of many variegated climes, cultures, and complexions slew each other or were slain by crazed carnivora.

Neither warfare nor dramatized slaughter can qualify inside the modern meaning of sport and sportsmanship, therefore the America's conquest three-fourths of a century ago sounded the first international note in sports. The doughty yacht blazed the trail as a true pioneer.

Yachting was thus the first sport, and yachtsmen the first sportsmen, to respond to the bugle call of world progress. That year, 1851, came the first of all the World's Fairs, the London Fair. All nations were invited, as spectators, or, if they chose, as participants. The United States yachtsmen were the only sportsmen who responded strongly enough to carry their fame down through the seventy-five years and more that have intervened.

They were pioneers when they sailed from New York on the 21st of June. They were dauntless pioneers when they entered the America in the race for the Royal Yacht Squadron Cup, 100 guineas' worth of cup, posted as the prize of an open race, all classes, in the waters around the Isle of Wight.

They were triumphant pioneers when they sailed the America to victory over fourteen British yachts, the crack craft of a nation old in the lore of the winds and the sea before the first boat of any kind was ever hammered together in any New World yard.

That victory changed the Royal Yacht Squadron Cup to the America's Cup. It was the first rope of the sports network which now ties the wide world of sports together. In the subsequent three-quarters century, cricket teams invaded the States, golfers and tennis champions crossed the Atlantic both ways as invaders, and sports internationalism became an established institution; but its history dates from August 22, 1851, as definitely as western hemisphere history dates from October 12, 1492.

The Star Class carries on the pioneer spirit of the America as the twentieth century moves into its second quarter. The Star Class is the only successful application of the one-design principle on a world-wide scale. Modern international sport cannot live and thrive if it is the sport of kings and millionaires exclusively. The

Photo by Levick

STAR BOAT UNDER THE VERY BEST OF SAILING CONDITIONS, TEMPE II—NEWPORT HARBOR

California sent this entry to the 1926 International Series

soundness of the principle on which the Star Class is founded forces home the inevitable conclusion that the future of international yachting is written in the Stars.

The emblem of the Star Class is a five-pointed RED star. If the star is a GOLD star, the yacht you are looking at is an international champion.

The specifications of the Star Class, and the list of the officers of

the Association, which apply in Singapore as accurately as in Long Island Sound, are as follows:

L. O. A.	22′ 7½″	Mast (to sheave)	27′
L. W. L.	15′ 6″	Boom	18′ 4½″
Beam at deck	5′ 8¼″	Sails	Mainsail & Jib only
Beam at chime	4′ 6″	Sail-area	281½ Sq. In.
Draft (about)	3′ 4″	Keel, cast-iron	900 Lbs.

Marconi rig. Materials, standing and running rigging, and fixtures are mostly optional. Design and construction, however, are standardized and cannot be varied.

International Officers

Commodore	G. A. Corry
President	G. W. Elder
Vice President	P. E. Edrington
Sec'y-In-Chief	T. D. Parkman 38 Park Row, New York, N. Y., U. S. A. Cable Address—"Iscyra"
Treasurer	W. H. Gidley

Others constituting International Executive Committee:

L. W. Bainbridge, New York	E. Bogardus, Honolulu
W. C. Wood, Providence	J. E. Jessop, San Diego
J. E. Gorrin, Havana	H. E. Wylie, Vancouver
H. H. Elliott, Chicago	Colin Ratsey, Cowes.

Organization

The International Star Class Yacht Racing Association governs the class. It is subdivided into units known as Fleets. A Star Fleet consists of all yachts and owners in all clubs in a given major yachting locality. Each of the Fleets is self-governing under its own Fleet officers. A district consists of a group of Fleets in some definite part of the world, such as the Pacific coast of North America. The major officers of the parent body are elected by Fleet delegates at an annual meeting held during the period of the International championships. A representative from each district is also elected to serve with them on the International Executive Committee. The Association issues a yearbook and a monthly publication which advises the membership of all activities. A

Measurement Committee, with Certified Measurers in all districts, keeps the class uniform. There are also Committees on the sale of plans, sale of standardized frames, transportation, racing insurance, housing, entertainment, motion pictures, advertising, and on rules. The Association finances and conducts its own International championships, having an International Race Committee. Dues are little more than nominal, yet the Association has been self-supporting and has shown a substantial profit every year since it was organized.

FLEETS HOLDING CHARTERS

Western Long Island Sound	Flota de la Habana
Massachusetts Coast	San Diego Bay
Detroit River	Newport Harbor, Calif.
Lake Ontario	Hawaiian Islands
Eastern Long Island Sound	Solent
Central Lake Erie	Gulf of Georgia, B. C.
Gravesend Bay	Philippine Islands
Los Angeles Harbor	Bahia de Cienfuegos
English Bay, B. C.	Lake Champlain
South East Florida	Western Lake Erie
Central Long Island Sound	Santa Barbara Channel
San Francisco Bay	Barbados
New Orleans Gulf	Waitemata, New Zealand
Lake Otsego	Great South Bay
Narragansett Bay	Delaware River
Chesapeake Bay	Hampton Roads
Lake Michigan	Peconis Bays

ORIGIN OF THE STAR

In 1907, William Gardner designed the smallest keel sloop of its day. Known as the Bug Class, it was a Star in miniature. It was just one of the many semi-popular useless little classes of that time, too small for a full-grown man to really sail in. The lines of the Bug were not copied from any other existing class, but, in so far as such a thing is possible, were originated by Mr. Gardner and a Mr. Maybrey. At the suggestion of G. A. Corry, Gardner & Company enlarged their own design about five feet in length (the actual drawings being made by Francis Sweisguth) and thus the Star was produced. Isaac Smith of Port Washington built twenty-

two of these boats and they were raced on Long Island Sound for the first time in 1911. Later the same year, eleven more were built by Green Brothers of Chelsea, Mass. These were, however, known as Nahant Bugs and were not recognized to be true Stars until the International Association was formed some ten years later. A third, and larger, class from the same design was attempted about 1913 and called the Fish Class. Four of these boats were built and proved a failure. While the larger and smaller variations of this design did not meet with success, the Star struck a happy medium and was destined to become the largest of all one-design classes and to revolutionize yacht racing in many respects.

Purpose

George A. Corry, "Father of the Stars," was responsible for starting the Class. He conceived the idea of providing an inexpensive boat, that was a real little racing machine, for men of ability but moderate means. This was in the days of the large yacht, when racing was a rich man's game and something of a society function as well. Small boats were considered playthings for boys, but it is well to note that from the beginning the Star was never intended as a training school for novices. It was dedicated to experienced skippers who could not afford large yachts. The recognition of ability, regardless of financial or social status, was George Corry's contribution to yachting. He had local conditions in mind only, of course, and probably gave no thought to expansion beyond Long Island Sound.

Development

The present system of organization, world-wide development, and of bringing International championship yacht racing to the multitude as an organized sport, was worked out by G. W. Elder in 1916. It was placed before the Star Class Association of America, a little loosely-knit class organization formed the previous year, but was considered an impossible undertaking. Stars had been built each year since 1911, but only a few of them, and this apathy continued up to and during the World War. The class remained intact and was largely responsible for bringing the sport back during the recon-

struction period. There were about thirty Stars on the Sound, four on Lake Erie, and a few elsewhere that were unrecognized at that time. In attempting to arrange a race between Lake Erie and the Sound, G. W. Elder located several small groups of Stars in the East and placed before them his plan of a parent body and Fleets with an annual championship. As a result, the present

Photo by Rosenfeld

STAR BOATS POUNDING INTO GREAT SEAS. 179, PORPOISE, FROM BALTIMORE. 161, CALIFORNIA, FROM LOS ANGELES, IN THE 1923 INTERNATIONALS

Association was formed at the Hotel Astor in New York City on January 20, 1922. In September of that year, the Atlantic, Pacific, and Great Lakes met for the first time in a yacht race. The five original Fleets, all in the East, had increased to ten and the Class had spread across the continent and had become International before the end of the year. Prior to this, intersectional yacht racing was almost unknown in North America; the ice had been broken, however, and the Star Class spread like wildfire from then on.

The International Championships

Throughout the year, each Fleet holds its elimination races and each is entitled to send its winner to the annual International Championship Series, which is held on the home waters of the Fleet having last won the title. This, it will be noted, is a perfect system of elimination that offers every owner an equal chance of

Photo by Rosenfeld

Astrea—British Columbia's Entry in the Internationals
Star Boats are in their element when the wind blows

working his way through to the championship of the entire Star Class. For this reason, the event is probably the most representative in all yachting. The Philippines, the Hawaiian Islands, and many other distant points send yachts, skippers, and crews halfway around the world each year to compete in this event. Members, by the hundreds, come with them just to see the races and enjoy the social activities ashore, and much attention is devoted to this feature as well. In 1927, the entries had reached seventeen, repre-

senting that many different parts of the world. For four years the title was successfully defended by the Star Skippers of Western Long Island Sound, the veterans of the class. Gradually other skippers gained experience and bridged the gap and the Series went to Narragansett Bay, which was in turn defeated in 1927 by a challenger from Newport Harbor, California. The big cup, the blue ribbon of the seven seas, now rests on the Pacific coast, where it will be competed for again in the early fall of 1928.

Star championships do not stop with the "Internationals," however, and there are many National and Intersectional events; in fact, there is one for every month of the year some place. The second in importance is the Mid-Winter Championship, held annually at Havana, Cuba. This consists of a series of three races for a perpetual trophy presented by the Cuban government. The cup in question is probably the largest and most valuable known to any sport. The same system of elimination prevails and many North American Fleets send entries. On alternate days there are open races for the Bacardi Cups and many other valuable prizes. There is also an annual four-boat team race between the United States of America and Cuba. This week of winter racing is sponsored jointly by the Cuban National Tourist Commission and the I. S. C. Y. R. A. Then there are the Atlantic Coast, the Pacific Coast, the Inter-Lake, the Australasian, the West Indies, the Hawaiian, the Cuban National, the Pacific-International, and endless other major Star championships each year. There are three different Lipton Trophies, many Race Weeks, and many famous long-distance races. Of these last named there is the Capt. Island Race, over a 47-mile course, that has been running since 1915. There is a 100-mile race from New Orleans to Biloxi, sailed at night in open ocean. The winner's time in 1927 was 12 hours, 2 minutes, and 10 seconds. This may give a general idea of the time made by Stars. There are over 15 perpetual trophies, running in value from $1,000 to $8,000, and it is estimated that more than 1,000 Star races are held each year.

Past Champions

International Champions of the Star Class

1927	Tempe III	W. Hubbard, Jr.	Newport Hr. Cal.	17 entered
1926	Rhody	B. W. Comstock	Narragansett Bay	16 "
1925	Ace	Adrien Iselin	Western L. I. Sound	15 "
1924	Little Bear	J. R. Robinson	Western L. I. Sound	10 "
1923	Taurus	W. L. Inslee	Western L. I. Sound	8 "
1922	Taurus	W. L. Inslee	Western L. I. Sound	6 "

Mid-Winter Championships at Havana, Cuba

1927	Sparkler	P. E. Edrington	New Orleans Gulf	8 "
1926	Irex III	E. A. Ratsey	Western L. I. Sound	7 "

Open Championship of Long Island Sound

(Of historic importance; prior to 1922 it was championship of Class)

1927	Iscyra	Elder	1919	Altair	Willis
1926	Irex III	Ratsey	1916	Hydra	Hyde
1925	Irex III	Ratsey	1915	Little Dipper	Corry
1924	Maia II	Linkfield	1914	Little Dipper	Corry
1923	Maia II	Linkfield	1913	Star Faraway	Fry
1922	Maia	Linkfield	1912	Little Dipper	Corry
1921	Saturn	Elder	1911	Little Dipper	Corry
1920	Taurus	Inslee	In 1917–8 no series, war		

Atlantic Coast Championship

1927	Mackerel	Smith	Chesapeake Bay
1926	Ardara	Starring	Central Long Island
1925	Ace	Iselin	Western Long Island

Pacific Coast Championship

1927	Windward	Jessop	San Diego
1926	Windward	Jessop	San Diego
1925	Movie Star	Schauer	Los Angeles
1924	Windward	Jessop	San Diego
1923	Maia	Churchill	Los Angeles

Inter-Lake Championship

1927	Alyra	Darlison	W. Erie
1926	Scrapper	Clancy	Detroit R.
1925	Twinkle	Wakefield	W. Erie
1924	Dipper	Lucas	C. Erie
1923	Twinkle	Wakefield	W. Erie
1922	Twinkle	Wakefield	W. Erie
1921	Neptune	Boice	———

Cuban National Championship

1927 Gavilan Gorrin F. de H.

Australasian Championship

1926–27 Loa IV Swinnerton W. N. Z.
Same in 1925–26 and 1924–25.

The Marconi Rig

The Marconi (Bermudian) rig was first tried out on a Star in 1918 by D. H. Cowl. At Mr. Gardner's suggestion, the boat carried a curved hollow spar and huge spreaders. Handled by different skippers in special races, it was always badly defeated. No further attempts were made in this direction until 1921; then Linkfield, Teves, and Inslee came out with thin solid sticks, raked far aft, and won many races. Elder introduced a vertical mast, without spreaders, the same year, winning the local title. By the end of 1922 there was scarcely a gaff-rigged Star left in the Class. The change was a very simple one, due to the long, high-peaked gaff, and the sails did not even have to be re-cut. This rig overcame the Star's one fault, a slight tendency to bury in a breeze, and made it a much faster and better-balanced boat under all conditions.

Sail Plan of Star Boats

Picture shows underbody profile. Designer, William Gardner. Stars boast more owners than any other single design class

Qualities

Because of the important part that Long Island Sound (noted for its light airs) has played in Star history, some believe that these boats are not able. They forget that 80% of the Star Fleets race in rugged waters and many of them in open ocean only. The

Mid-Winter races are all sailed off the coast of Cuba, on a lee shore, and in great breaking seas. Stars have raced there when it was impossible for cars to drive along the Malecon. On that famous day in 1920, when the America's Cup Race was called off, 25 Stars raced and all but 3 finished. While racing for the United States Shipping Board Trophy on Lake Michigan in 1927, the entire Fleet of 17 Stars finished, whereas half the large yachts, "R's," etc., carried away or withdrew. In a 56-mile-per-hour gale (officially recorded) and with no other boats venturing out except the Coast Guard and officials, Stars raced and finished in 1926. In light air, it is not at all uncommon for Stars to overtake and pass many of the much larger classes that started ahead of them. Though not intended for that purpose, Stars have won the championship for mixed classes (including up to 30-ft. waterline boats) at Hongkong, Barbados, and elsewhere. For seventeen years they have been subjected to every possible test. They are being raced on bays, lakes, rivers, and open ocean with like results. In addition to this, the first Stars ever built are still winning races when properly handled. In 1927, George Corry was the runner-up among 45 entries in the Sound's International eliminations;—he was sailing No. 1.

Cost, New and Old

The first Stars cost $250, but that was when beer was five cents a glass and shipyard hands did not roll up to work in their own sedans. In the vicinity of New York, they now cost from $700 to $900 complete, depending upon the material, finish, and extra equipment specified. In other localities, the prices differ to a great extent. The early Stars were very crude and unfinished in comparison with the highly-refined product of today. The design was the same and the evolution was so gradual that the owners of the old boats have had no difficulty in keeping pace with it.

One remarkable feature about the Star is the fact that the boats maintain their value. Secondhand Stars sell for as much as the new ones. This is because the demand exceeds the supply and because no builder can afford to produce a new boat with as fine

a finish as those on which the owners have put in hours of work. Stars with an exceptional record have often sold secondhand for more than $1,000. Sails are a different matter, of course. The best cost about $150 and their life depends entirely upon the care they receive. Where light airs prevail, a new suit each year is almost necessary, if the competition is keen.

Rules and Regulations

Eligibility depends upon the yacht having a certificate and the owner being a member of the Association. Strict regulations govern the right of both skipper and crew to represent a locality. Only two persons are allowed in the boat. Light sails cannot be used, but jibs are winged out by means of a whisker pole (about 9½ ft. long) when running before the wind. There is no limit on the number of new sails or haul-outs allowed per season, but each Fleet may have local restrictions of this character, if desired. Anything that is expensive and tends to increase the speed or alter the design—such as silk or double-luffed sails, board booms, revolving masts, etc.,—is barred. Any device or fitting which facilitates handling or tuning—such as self-locking back stays, adjustable mast rakes, etc.—but which is not essential to the speed of the yacht, is made optional. Racing Rules, for the sake of a standard, are those of the North American Y. H. U. Class Rules differ from those of other one-design classes, for all traditions have had to be discarded in order to solve the problems of the Star Class. The rules are not intricate but very complete. Nothing is left to arbitrary decisions.

One-Design?

There are those who ask whether the Star is strictly a "one-design." If they mean whether all yachts are built from the same plans and as accurately as ordinary practice will allow, it is. If they wish to know whether all the boats are absolutely identical down to the smallest detail, then the answer is "No," nor does any one-design class exist under such an interpretation of the term, except in the minds of those who have never investigated the matter.

The Star is a growing class. Materials contract and expand. The same materials are not available in all parts of the world. These facts are recognized and provided for by the Star Class. Every boat is measured with carefully tested templets and by a qualified expert (a non-owner) and all dimensions and scantlings are reported on a special form. Contour and half breadths are

Photo by Levick

24, IREX STAR BOATS 42, YEGA

This gives a good idea of the deck arrangement

taken at ten stations. Then the International Measurement Committee applies the table of "Allowed Variations" (which is figured in fractions of an inch) and either grants a certificate or rejects the yacht. The same minor variations exist in all classes, but the enthusiasts of other classes never investigate this point and take it for granted that their boats are identical. In the Star Class there is no guesswork, the range of normal and unavoidable variations is known, abnormal variations result in disqualification,

though in other classes they pass unnoticed. If anything, the Star sticks more closely to the theory of the one-design class than the rest. It does not attempt to live up to an impossible and theoretical term but to maintain a common sense standard.

Policy

The aim of the Association is to keep the cost of Stars, in so far as essentials are concerned, at least, down to a minimum, so that international racing may be developed on as broad a basis as possible. The Star, however, is for championship competition above all else and the Class is opposed to any foolish restrictions which might prevent an owner of ability from keeping his boat in as perfect condition and tune as possible. The design and construction are carefully guarded, but the Class encourages anything in the way of improvements and refinements. These rules do not favor the lazy or inexperienced skipper, and are not intended to do so. The Association recognizes the fact that ability does not stop with the handling of the boat in a race, but includes the art of tuning and conditioning. The ability of the skipper is reflected in his yacht, and it is only by giving him full leeway in such matters that real all-round champions can be produced. Because of this policy, the Star Class attracts expert skippers, creates an incentive for keeping all yachts in prime condition, and maintains a high standard in yachting circles.

Achievements

The Star made its appearance at a time when the hundreds of little one-design classes, mostly restricted to one club, were keeping yachtsmen apart and preventing any sort of common standard. It was the first class in North America to unite all localities by giving them a common bond of interest. It was the first class to bring recognition to the man of real ability but small means, and to show the world that there was a vast difference between the racing skipper and the "Yachtsman." It has developed yacht racing in many a locality and revived the sport in many places where it had completely died out. By bringing the yachting interests of North America together, when all other efforts in that direction had

failed, the Star has paved the way for all other classes and yachting in general has benefited as a result. What it has accomplished in North America, it is now rapidly accomplishing throughout the entire world and is speedily approaching a world-wide standard, the dream of all yachtsmen who have the interest of the sport at heart.

SOUND INTER CLUB CLASS

By William W. Swan

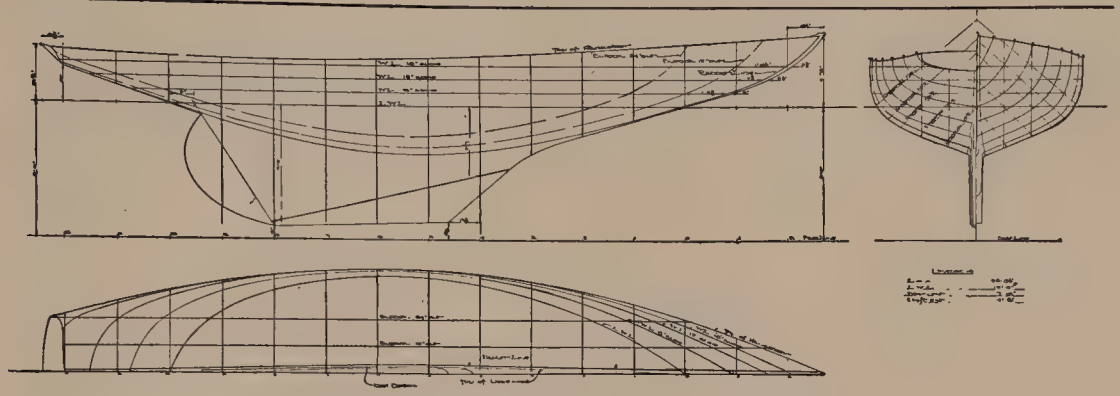
DURING the Fall and Winter of 1925 it became evident, through friendly discussions among various yachtsmen in and around New York, that there was room for a small, wholesome, day-sailing or racing class, in between the Star Class and the 6-Metre Class.

This group of men, led by Mr. Carroll B. Alker of the Seawanhaka Corinthian Yacht Club, had vision. They wanted a comfortable day sailer of pleasing lines which could be raced by those so inclined, or sailed by the junior element, which is so necessary to the future life of yachting; and yet they wanted a boat that would cost less than the 6-metre. Several designs were submitted and finally those of Charles D. Mower, naval architect, of New York, were chosen as the one design most nearly fitting the dream of the sponsors for the class.

Mr. Mower's design called for a staunchly built sloop of 28 feet, 9 inches overall; 19 feet on waterline, 7 feet, 6 inches beam, and 4 feet, 6 inches draught, with 2,500 pounds of outside lead. It was to be Marconi rigged, with 425 square feet area, have a small cabin with 4 feet head room, and the cockpit and design for deck layout was to be made comfortable and easily handled. Mower supplied all these requirements ideally, as can be seen from the accompanying reproduction of a set of drawings and photographs.

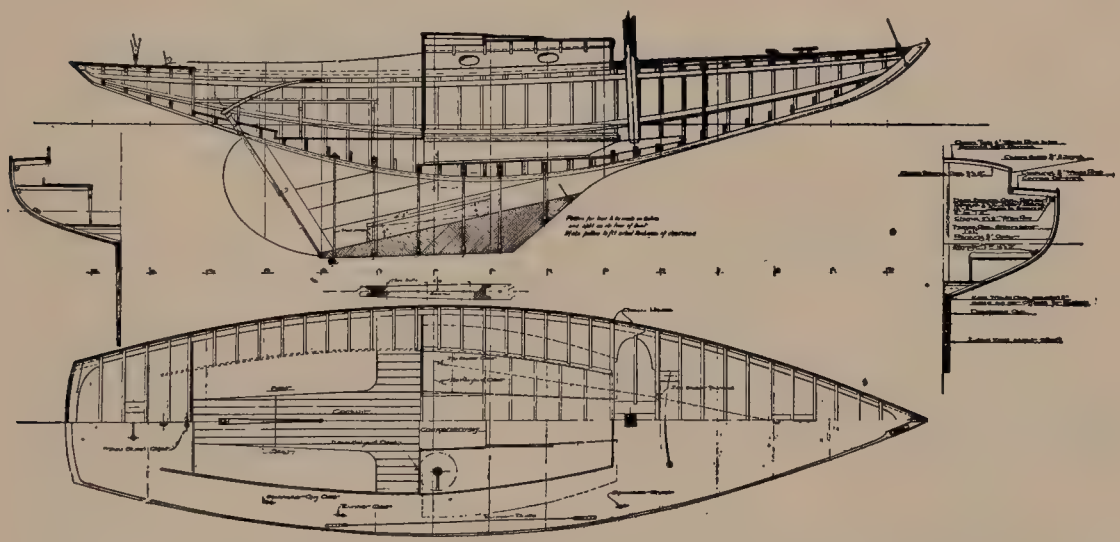
SOUND INTER CLUB CLASS

Twenty-eight boats were ordered by yachtsmen in the Metropolitan area and the boats were constructed by Harry B. Nevins at



LINES—SOUND INTER CLUB CLASS
Charles D. Mower, designer

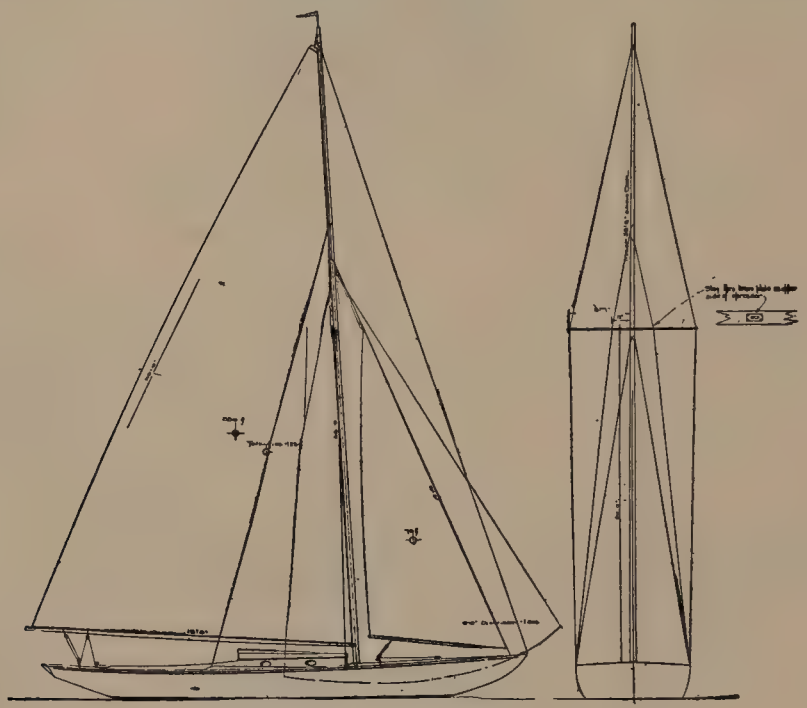
City Island, New York, at a cost of $2,400, including one suit of sails by Ratsey. Several of the purchasers bought these boats for the use of their children, both boys and girls. Three or four



ARRANGEMENT PLAN—SOUND INTER CLUB CLASS
Charles D. Mower, designer

shouldered a small additional charge by having toilets installed under transoms in cabin to make a complete little cruiser for week-end trips.

Nevins did a good job of building. The entire fleet was framed from one mould and the finishing in solid mahogany trim was even more than the specifications called for. There were misgivings in several quarters regarding the masts. These sticks were 40 feet long, and only 4 inches in diameter at the heaviest point. But Nevins chose excellent material and the only dismastings reported were one where a back stay was forgotten in a jibe and another



SAIL PLAN—SOUND INTER CLUB CLASS
Charles D. Mower, designer

caused by a mishap at anchor. The only other casualty to a mast was when the Wee Betty was struck by lightning and had her mast split.

The racing in this class was very keen. There were more than 17 boats starting in 15 out of 22 championship races. The largest number to start in any one race was 23. Every boat in the class raced at some time during the season. The class stood only third in L. I. S. Y. R. A. percentage of starters to possible number that could start. This condition is partly accounted for because 5 of the boats were not bought to race, but for pleasure sailing; yet even

these 5 boats got in the game when the regatta happened to be held near their home port.

A complete list of the original owners as of May 30, 1926, follows:

Name of Boat	*Name of Owner*	*Address*	*Yacht Club*	*Racing Number*
Chicks	H. A. Alker	131 E. 46th St., N. Y. C.	M. B. Y. C.	1
Ginette	Carroll B. Alker	N. Y. Y. C.	S. C. Y. C.	2
Osprey	O. M. Mitchell	44 Pine St.	Am. Y. C.	3
Babette	J. B. Shethar	Rye, N. Y.	Am. Y. C.	4
Etta	Ralph H. Hubbard	60 Beaver St.	Am. Y. C.	5
Ermar	E. P. Alker	Great Neck, N. Y.	M. B. Y. C.	6
Twildo	E. T. Fox	83 Maiden Lane	H. H. Y. C.	7
Wee Betty	G. M. L. LaBranche	148 Loring Ave., Pelham	L. Y. C.	8
Chinook	Geo. Lauder	Greenwich, Conn.	I. H. Y. C.	9
Ahab	Rodney W. Williams	Mill Neck, L. I.	S. C. Y. C.	10
Merrywing	Louis Carreau	796 Sixth Ave.	L. Y. C.	11
Opal II	Chas. H. Appleby	1060 Park Ave.	H. H. Y. C.	12
Bandit	San Wetherill & H. L. Stone	25 West 43d St.	N. R. Y. C.	13
Our Gal	K. A. Loose & H. Ford	Rye, N. Y.	Am. Y. C.	14
Ariel	Lewis Iselin	36 Wall St.	N. Y. Y. C.	15
Shorty II	Chas. S. Wills	286 Fifth Ave.	I. H. Y. C.	16
Seawan	Henry A. Rusch	387 Fourth Ave.	S. C. Y. C.	17
Skylark	Geo. V. Smith	c/o Schmitt Bros., 523 Madison Ave.	Am. Y. C.	18
Lotus	Spencer W. Aldrich	71 Broadway	S. C. Y. C.	19
Flying Gull	Ralph L. Cross	Rye, N. Y.	Am. Y. C.	20
Orithyia	A. W. Hicks	Roslyn, N. Y.	H. H. Y. C.	21
Po	E. R. Newell	247 Park Ave.	I. H. Y. C.	22
Poppy	Madison Haythe	261 Broadway	M. B. Y. C.	22
Pegety	Geo. B. Gibbons	40 Wall St.	Am. Y. C.	24
Aileen	J. B. Dunbaugh	Pier 44, N. R.	L. Y. C.	25
Triton	H. J. Fisher	Greenwich, Conn.	I. H. Y. C.	23
Sister	Perry A. Bogue	115 Broadway	I. H. Y. C.	26
Daphne	L. B. Leeming	130 William St.	I. H. Y. C.	27

This shows what a wide interest the boats created.

At the start of the season, in fact up to June 15th, it looked as if the Aileen, owned by J. B. Dunbaugh, vice-commodore of the Larchmont Yacht Club, and sailed by Cornelius Shields, would

Photo by Levick

SOUND INTER CLUB CLASS—BANDIT

Owner, Samuel Wetherill, assistant editor of Yachting, Larchmont Yacht Club. Bandit finished third in class championship both in 1926 and 1927. This boat is always among the leaders.

make a runaway race of the class. It was freely predicted at the Larchmont Yacht Club that, handled by "Corney," who is considered by many to be the premier small boat sailor of the Sound, the Aileen would clean up the class. In fact, many yachtsmen backed this opinion by taking "Corney" and the Aileen against the field. To other yachtsmen this did not seem possible, with J. B. Shethar at the helm of his Babette and Sam Wetherill at the helm of his Bandit, and such skippers as C. B. and H. A. Alker, G. B. Gibbons, E. T. Fox, Hobart Ford, Spencer Aldrich, A. W. Hicks, and C. H. Appleby—all opposed to letting Aileen "take 'em to camp."

Also add the possibility that some of the younger skippers, such as O. M. Mitchell, Jr., Ralph Crow, or Madison Haythe might develop strong opposition. And, last of all, add the possibility that one of the boats might be sailed by some strong helmsman of experience, such as Kenneth Whiting of Larchmont, Bill Swan and Robert C. Bavier of New Rochelle, Clinton Riggs of New York, Jack Johnson of Greenwich, etc. So the Aileen really had competition because all these possibilities came to pass.

To get back to the racing: Aileen seemed to have it on the class at first with Babette and Bandit close up. With from 17 to 23 starters in every race, however, a boat which finishes in the first 5 regularly stands a good chance in the averages; and at the end of the first half of the championship series, only a few points separated the Wee Betty, George LaBranche's boat, and the Aileen.

During Race Week, the Babette won the series with 108 points, and the Aileen and Wee Betty tied for second with 104.

During the last half of the championship series, the Wee Betty steadily pulled away from her rivals. The Bandit gained in the percentage standing. The Wee Betty made what is considered by many to be a record performance, by scoring 107 points out of a possible 112 against a large, well-sailed, one-design class. In other words, only five boats finished ahead of the Wee Betty in the last nine races.

The entire 1926 championship score for the L. I. Sound Yacht Racing Association medal follows (see page 65.)

Photo by Levick

SOUND INTER CLUB CLASS—BABETTE

Owner J. B. Shethar, American Yacht Club. Babette won the class championship in 1927 with 81.6 per cent. Capt. Shethar, who is the class president, kept Babette well up all through the season. He did not win many races but was consistently among the first five to finish in a year where the average number of starters was sixteen in each race.

SOUND INTER CLUB CLASS

	Boat	*Owner*	*Sailed By*	*Percentage*
1.	Wee Betty	G. M. L. LaBranche	Bill Swan	.851
2.	Aileen	J. B. Dunbaugh	Cornelius Shields	.787
3.	Bandit	H. L. Stone & S. Wetherill	Sam Wetherill	.720
4.	Babette	J. B. Shethar	Owner	.653
5.	Triton	Bennet Fisher	Owner	.628
6.	Twildo	E. T. Fox	Owner	.593
7.	Ginette	C. B. Alker	Owner	.591
8.	Our Gal	Hobart Ford & K. D. Loose	Hobart Ford	.572
9.	Pegety	Geo. B. Gibbons	Owner	.551
10.	Lotus	Spencer Aldrich	Owner	.511
11.	Orithyia	A. W. Hicks	Owner	.498
12.	Opal II	C. H. Appleby	Owner	.449
13.	Skylark	Geo. V. Smith	Owner	.442
14.	Chinook	Geo. Lauder	Owner	.423
15.	Osprey	O. M. Mitchell, Jr.	Owner	.409
16.	Flying Gull	Ralph Crow	Owner	.394
17.	Chicks	H. A. Alker	Owner	.300

To show how popular this class has become because of the calibre of the boat, there are only two boats known to have changed hands since the end of last season, and then only because the owners are buying 6- or 10-metre boats. None of the leading eight or ten boats are changing hands and the same skippers will race them, although I know at least two who were offered the helm of the new 10-metre class.

This 1927 season will be even more scrappy than the last, although the members now know one another better and the class morale will be better; but there are reputations to be upheld or rewon and all the owners and skippers of the Sound Inter Club Class are looking forward to the coming racing season with a great deal of pleasure.

These boats handle well under all conditions. They are balanced perfectly for all light to moderate sailing breezes and only have a slight weather helm in strong to heavy breezes. It certainly is a pleasure to sit at the tiller of a smart craft where one is not only comfortable, because of leg room and proper height of seats and rails, but where one can handle his boat with only thumb and forefinger on the tiller under average conditions.

Photo by Levick

SOUND INTER CLUB CLASS—AILEEN

Owner, J. B. Dunbaugh, Vice Commodore of Larchmont Yacht Club. Sailed by Cornelius Shields. It is interesting to note that Mr. Shields finished second in the class both in 1926 and 1927, with approximately the same percentage. Mr. Shields is a consistently good starter and knows his tides and winds on Long Island Sound.

SOUND INTER CLUB CLASS

This class raced several times last year under extreme weather conditions. The ordinary thundersquall, hitting in during regattas, was peculiarly lacking during the 1926 season on Long Island Sound. However, there was more than the usual number of nor'easters and nor'westers. The Inter Club Class withstood them all without serious mishaps, and, as far as I know, without reefing a single mainsail.

Two men, the skipper and a crew, are enough to handle them in light going. Under ordinary racing conditions and championship regattas three men are plenty and, in my opinion, all that should be allowed. Four, however, may be carried, which allows an "elephant" to come aboard in bad weather on those boats whose owners are fortunate enough to have at hand emergency sailormen.

The boats, being all constructed from the same mould of uniformly good material, are remarkably close in performance. Their designer skimped a little on lead because he believed that four men in the crew allowance would hold them down to proper waterline and sailing angle. About a month after they were launched it was decided that the addition of some lead ballast would be an advantage. This was placed in the bilge and when properly distributed made the boats much stiffer and did away with the necessity of four in crew in heavy breezes.

This lead has been cast in two slabs and inserted in deadwood of keel just above the lead for 1927 and should stiffen them still further because of the 18 inches greater leverage it will assert.

The sail plan has been slightly altered to counteract this leverage. All mainsails will be slightly larger next year, because they will be cut to nearer the full length of boom and hoist. The forward triangle has been filled by adding about 18 inches to hoist of jib, thus increasing its area by about 3 square feet.

CLASS R SLOOPS

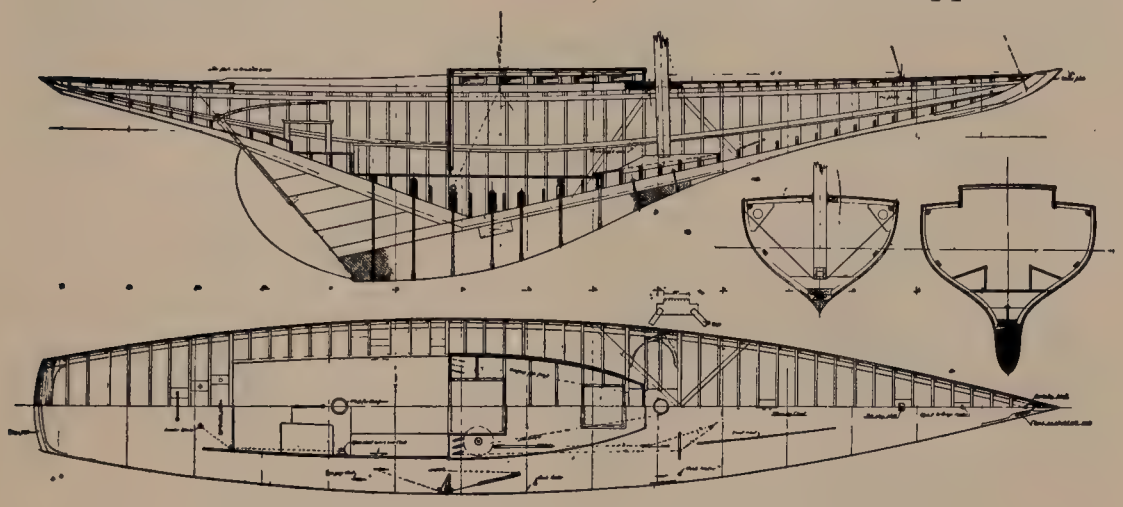
By J. W. Streeter

IN America it is safe to say that four-fifths of the yacht races are sailed between boats built from the same plans. This predominance of one-design classes has made many of the younger yachtsmen think the progress of the sport can correctly be measured by the increase in the number of boats racing. There is no doubt that this is a criterion of its popularity, but they do not look deep enough if they are to judge the advance in the art of designing. It is the open-class racing, the racing in which every boat represents an experiment or a compromise, that makes yachts improve. The older men can well remember when there was no such thing as a group of boats with identical lines; all of the racing was carried on under rating rules, some of them good and some bad. Many craft of that period would seem ridiculous now, but credit must be given to the men who kept trying new things and thus contributed to the knowledge that permits us to build the fine sailing yachts we have today.

The general interest in boat racing has increased tenfold since the days when clumsy sand-baggers were raced for cash prizes, and the designers have tried hard to keep step. They have not been aided as they should have been, for with the advent of the flying start and other refinements of the racing rules the average yachtsman has come to think less of his boat and more of the technique of the game. This change of attitude has played a part in estab-

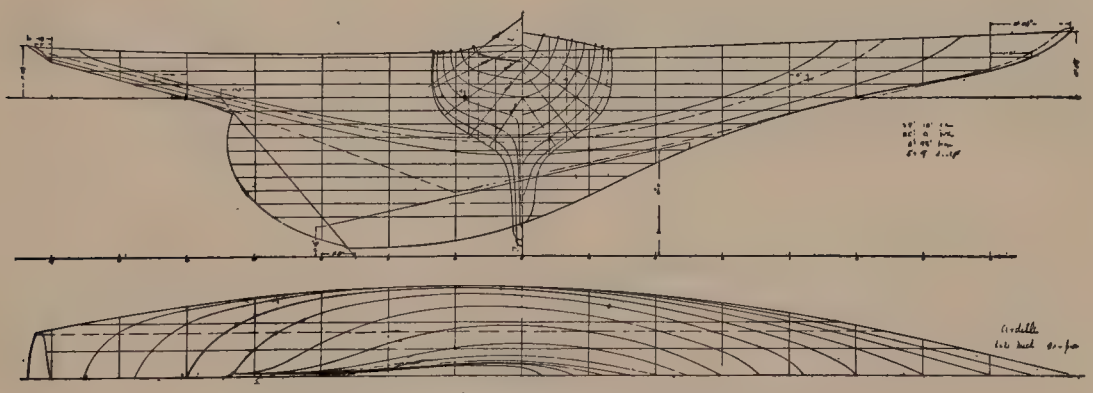
lishing the immense popularity of the one-design classes in this country.

In the majority of localities, and for most people, open-class racing is impractical, and any one of the countless supporters of



CONSTRUCTION PLAN OF CLASS R SLOOP, ARDELLE
Charles D. Mower, designer

the other branch of the sport can advance strong arguments that appeal to a great number of men. In spite of this, the best distributed and most active class of sloops in North America is the

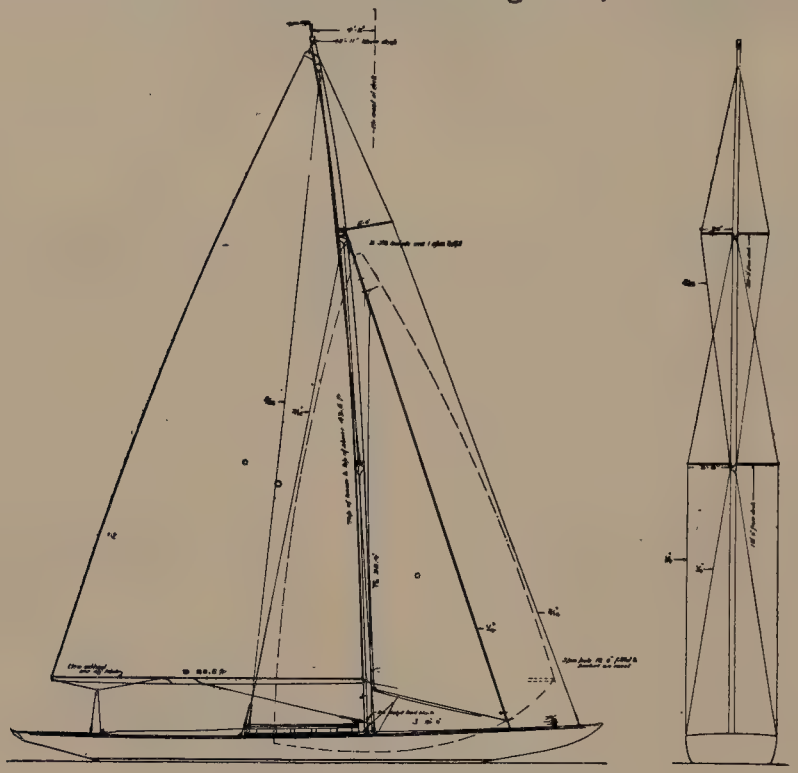


LINES OF CLASS R SLOOP, ARDELLE
Charles D. Mower, designer

R Class. This is a distinctly open class, for the boats are of widely varied design but are built to rate just below 20 feet under the Universal Rule. Among the owners of these yachts are many of

the most prominent yachtsmen of their different localities; partly because they wish to enjoy the unrivaled competition that this class affords, but more because they desire to take part in the movement that has ushered in most of the improving innovations of recent years.

To understand this development, it is necessary to become acquainted with the rule which was originally conceived, in 1898,



SAIL PLAN OF R BOAT, ARDELLE
Charles D. Mower, designer

by Nathaniel G. Herreshoff, the dean of American yacht designers. Seven years later it was adopted by a conference in which most of the leading yacht clubs and associations were represented. Since then it has nominally been the official formula for the measurement of yachts. It is commonly expressed in this form:

$$R = .18\,\frac{L \times \sqrt{S.\,A.}}{\sqrt[3]{D}}$$

R. Rating.
L. Length.
S. A. Sail-area.
D. Displacement in cubic feet.

By this means length and sail-area, the two factors upon which speed is dependent, are controlled and a premium is placed on weight which to a great extent determines stability. A sensible form is assured by the so-called quarter-beam penalty, which prohibits excessively full ends. There is a definite limit to the draught based on the waterline length, and there is a point beyond which credit is not given for extra displacement. In practice, the relation between length and displacement is almost constant; the result being that, while the sail-area remains practically the same, the waterline length varies considerably and the displacement varies with it.

Photo by Levick

ARDETTE

Designed by C. D. Mower

The application of this rule can be best illustrated by a typical sloop of the class. The Ardette which was designed by Charles D. Mower in 1925 for Donald H. Cowl, represents the class as a whole better than any of the boats that have been conspicuously successful in one locality. Her lines and sail plans show strength and character. Her dimensions are as follows: 38′ x 25′ x 7′ 3″ x 5′ 8″ with 582 sq. ft. of sail. It will be found that these can be substituted in the rating formula and a value of 19.76 is obtained, which is the same as all the others, for they have to be just below 20.

No two yachtsmen will agree on what is the finest kind of boat, but few can have the hardihood to say that the Ardette is not an extraordinarily fine boat for racing. It is hard to imagine a stauncher and handier sloop built to a rule allowing any freedom to the designer. The opinion of many is that she and the boats like

her are the best yachts of their size afloat. It is not because she is the fastest of the class that such emphasis is laid on the Ardette, but rather because she is a consistent all-weather performer without

HEATHER
One of the Crack R Boats of the Pacific Coast. Owner, Al Christie
Designed by Edson B. Schock

any features that detract from her practical qualities. Mr. Mower has been connected with the R Class since its beginning, and his productions are racing at or near the top wherever these sloops are found.

CLASS R SLOOPS

In the first years of the Universal Rule there were few boats built to Class R, and the designers, after the practice of the time, made them comparatively short; for it was not realized that a boat weighing 13,000 pounds could be made to go faster than a boat with the same sail-area and half that weight. This explains the increase in size, and the consequent displacement of the sloops to this day. In 1915, F. W. Goeller, Jr., designed several R's 21′ 8″ on the waterline, displacing about 6,500 pounds; while Herreshoff, in 1926, went to about the limit when he produced the Grayling, 27′ long and weighing nearly seven tons. Since the difficulty of handling a boat is roughly proportional to the sail-area, it is readily apparent that an advance has been made; for not many years ago no one thought that 600 square feet of sail could ever propel a sloop the size of a modern 20-rater at a reasonable speed.

In spite of the fact that the designers were not very sure of their ground, some fine R's were produced before the war, and a number are still performing creditably. Goeller's Ariel, Owen's Nirvana, and Mower's Neahga can be listed among these.

Today the class is found on both coasts and on the Great Lakes, and spirited racing is had in more than a score of places each season. The fleets fall naturally into a few groups which will be treated separately. Marblehead comes first, because more R's have been built to race there than at any other place, and because the champion of the class, as well as can be determined, is in its fleet.

When racing was revived at Marblehead after the war, the R Class was among the first to appear. The conspicuous feature of the boats of that period was the height of the rigs. It had been conclusively proved that the jib-headed mainsail was superior to the gaff rig. Furthermore, a narrow sail with a long luff was found superior to a sail of the same area but longer on the boom. Masts became excessively high, the limit coming when George Owen produced the Ruweida II, which dispensed with a jib and set its sail on a mast whose truck was 66 feet above the water, while the boom was only 18 feet long. She was fast, and under reduced rig proved very powerful.

These tall-rigged boats met their match when, in 1920, A. G. Hanan, one of the best amateur designers the sport has known, brought his beautifully proportioned Ariel to Marblehead in search of the Greenwich Cup. The Ariel and the Rogue, designed in 1917 by John Alden and sailed by Burton Hart, beat the Ruweida II and Alastor, a somewhat similar boat, in three races. Soon afterwards, the height of mast was restricted and a fifth of the total area had to be carried in a jib. This cured one trouble, but curved spars were still allowed.

Photo by Rosenfeld

YANKEE

Designed by L. F. Herreshoff

Charles Francis Adams, who for many years had been considered the foremost helmsman in the country, soon entered the class. He bought the Rogue from the Indian Harbor syndicate and started to win a large part of the races. When the other boats began to get too fast, he had the Lightning built from W. Sterling Burgess's plans in 1923. That was the year that Frank C. Paine's Gypsy appeared, which seemed to be unbeatable to windward. She won the championship in both 1923 and 1924. There is no doubt that she was one of the finest small sloops ever built.

C. H. W. Foster has probably owned more different racers than any other yachtsman. He became interested in Class R, and had Burgess design the Hilda in 1923. In 1924 he started a new movement by engaging Johan Anker to design and build at his yard a sloop which was called the Norseman, and which is now raced by B. B. Crowninshield. That year the sloop Quiver was built

for John S. Lawrence, now identified with the introduction of the staysail rig for schooners.

The year 1925 saw the advent of three new Anker sloops. Two of these were the Dandelion, built for Adams; and the yacht Yankee, an extraordinarily interesting creation by L. Francis Herreshoff for Charles A. Welch, 2nd. While Dandelion won the season championship, she was not recognized as being any faster

Photo by Levick

START OF CLASS R AT MARBLEHEAD

Boats, left to right: Dandelion, Spry, Ellen, Norseman, Mornifi, and Yankee

than the Yankee or the Gypsy up wind, for the latter was still nearly invincible on that point of sailing. Mr. Adams's skill was almost entirely responsible for her excellent showing.

The Eastern Yacht Club Ladies' Plate was put up for competition in 1925, and it is now considered the most coveted trophy that 20-raters sail for. The first year, the Dandelion finished one point ahead of the Gypsy, having been defeated only by the Yankee. The series was sailed under a unique system whereby the thirteen

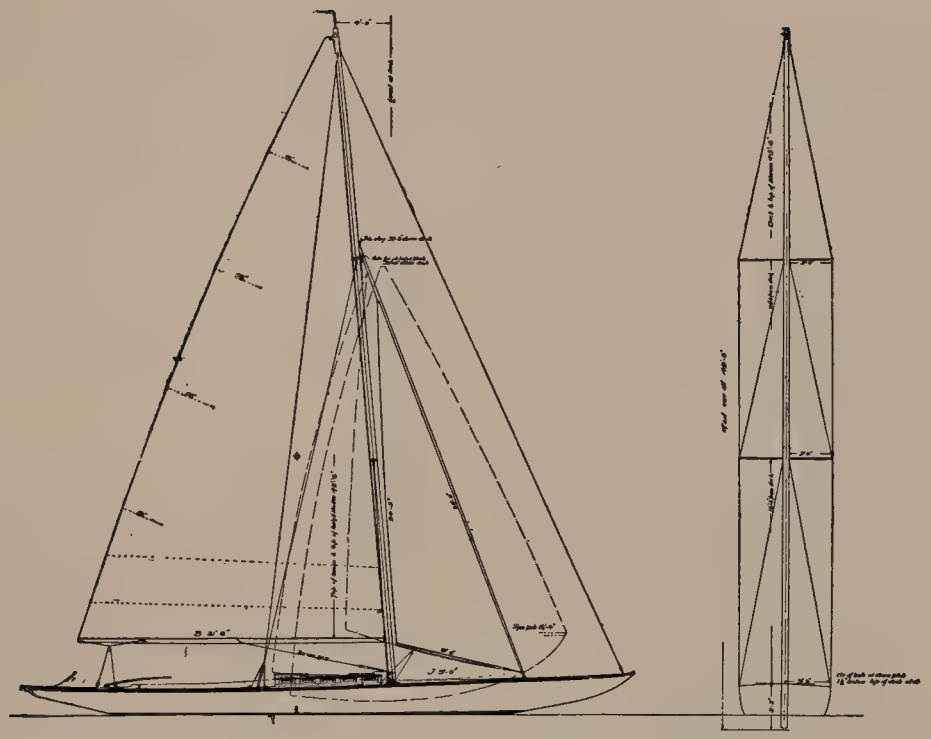
boats sailed four races in divisions of four or five, racing different competitors each time. The Quiver, then owned by Philip R. Mallory, Commodore of the American Yacht Club, and the Ardette came up from Long Island Sound for the event, but did poorly, in spite of the fact that the Mower sloop could outrun the fleet. Johan Anker was at Marblehead for the races, but was unable to make any of his Norwegian boats sail fast enough to win.

Commodore Adams had a new sloop, the Gossoon, designed by Burgess for the 1926 season. She incorporated several of the innovations started by the Yankee, notably the web-frame construction. Anker designed a new boat for Mr. Foster, based on his experience at Marblehead the year before, but Belknap planned the curved-mast rig for her. Three other racers were built to Burgess's designs, but they did not show sustained speed. One of them was the fifth of S. A. Begg's Ruweidas. The racing was very keen. The high marks were the series for the Ladies' Plate and the Manhassett Bay Challenge Cup, which Mr. Welch had brought back with the Greenwich Cup, when he and Mr. Paine took their boats to Long Island Sound to sail for these trophies late the year before. Seven New York sloops came up for these races, but fared little better than the year before, because the Gossoon won the Ladies' Plate, in spite of being disqualified the first day; while the Manhassett Bay Challenge Cup went to the Boston Yacht Club, represented by Ellen, a Burgess boat of 1925, owned by C. P. Curtis.

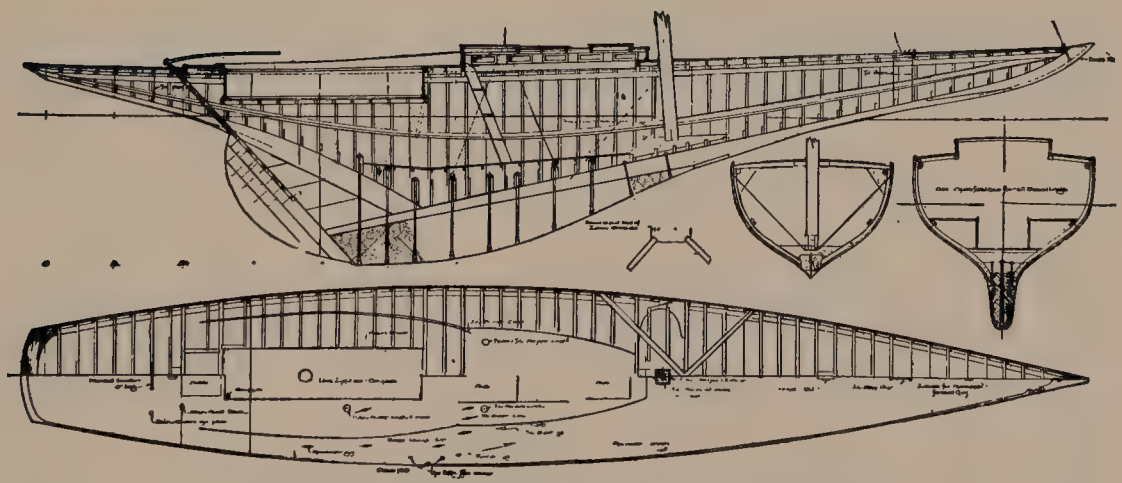
The Adams racer won the season championship handily, but the Yankee, which was runner-up, won the New York Yacht Club Cup. This trophy is raced for each year by a class designated by the officers of the club. When the R Class competed for it off Newport in 1926, the year it was presented, the Yankee emerged the victor in a spirited contest, with Charles H. W. Foster's Mary close behind. The boats racing included three from Marblehead, five from Long Island Sound, and one, the Tycoona, from Buzzard's Bay where there are several R's of various ages.

The Marblehead fleet has had a very noticeable influence upon a number of others, because many of the sloops have found their way to the Great Lakes and the New York region. The three

CLASS R SLOOPS



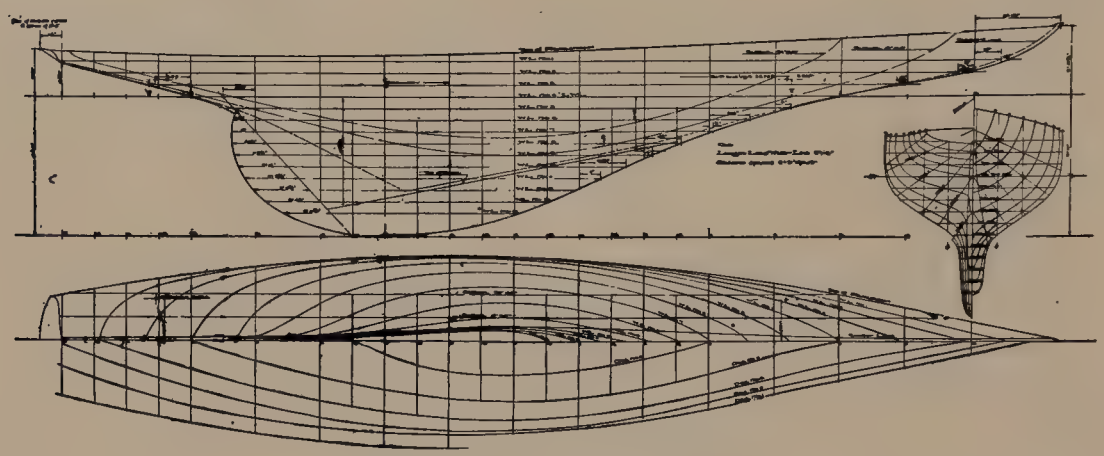
Sail Plan R Class Sloop Ace
One of the fastest boats in the class at San Francisco
Designer, Charles D. Mower



Construction Plan of Class R Sloop Ace
Charles D. Mower, designer

boats that Charles Francis Adams has discarded, namely, Rogue, Lightning, and Dandelion, are good examples, for they have all won their share of races in their new homes on fresh water.

From 1921 to 1924 Long Island Sound yachtsmen, interested in open-class racing, concentrated on the 6-metre class, but when the cup was won by the British, the R Class was revived. The summer of 1925 saw nine boats racing. The outstanding feature of this fleet was the fact that each sloop was from the board of a different naval architect. The sloop Gamecock owned by Commodore George Nichols of the New York Yacht Club, was one



LINES—CLASS R SLOOP ACE
Charles D. Mower, designer

of the few racing boats designed by Herreshoff after the war. William Gardner was represented by Harold Tobey's Secret, the last racer designed before he retired. John Alden, W. S. Burgess, Frederick M. Hoyt, Alfred E. Luders, and Charles D. Mower were other Americans whose creations competed for the honors in this class.

Harry L. Maxwell, who figured so prominently in the 6-metre class, commissioned William Fife, the noted English designer, to draw the plans of a sloop which was built at City Island, New York. The Fife's performance was watched with interest, but he was unable to make her show great speed.

Donald H. Cowl's Ardette went very fast at first, but the Quiver overhauled her to win Larchmont Race Week and eventually the

season medal. All the boats were well sailed; for such men as Burton Hart, Philip R. Mallory, and James W. Alker were at the helms. In September the Sound fleet lost the Manhassett Bay and Greenwich Cups to the Yankee.

Many variations in form and dimensions had been tried, but Clifford D. Mallory, President of the North American Yacht Racing Union, had a boat built in Germany from Alden's designs that exceeded all others in overall length by several feet. The Barbara measured 46′ 24′ 8″ x 7′ x 5′ 6″. She carried her extra length in the bow, but the experiment proved unsuccessful, partly because the builders did not follow the design accurately. The rest of the class were close to the Ardette in size.

Photo by Levick

GAMECOCK
Designed by N. G. Herreshoff

The restriction requiring straight masts was removed, and in 1926 the three Alden sloops came out with sharp curves in the upper part of their spars. This is noticeable in plate showing Commodore Robert Law's Doress in the foreground. C. Sherman Hoyt left the 6-metre class, and for part of the season sailed Robert B. Meyer's Bob-Kat which he himself designed. The Herreshoff yard at Bristol sent down a new racer for Junius S. Morgan which had the unprecedented waterline of over 27 feet. Donald Cowl sold the Ardette to the Lakes and raced the Ardelle a new and narrower Mower boat with a curved mast.

Eleven sloops had excellent racing in spite of the usual light airs of the Sound. The Quiver again won at Larchmont, but finished in third place for the season, when Bob-Kat and Ardelle almost

tied for first. The Herreshoff Grayling was too big for gentle breezes and placed farther down the list.

On Lake Ontario there is an active fleet of Class R sloops. They are centred in Rochester, Toronto, and Watertown. As many as

Photo by Levick

QUIVER TO WINDWARD OF ARDELLE

fifteen have raced for the Lipton Cup. Another trophy of importance is the George Cup. Unfortunately, a rather ingenious but impractical regulation of the moulded keel depth has caused a great deal of trouble, because a number of the boats brought from the East have been wanting in this particular. Protests on this

subject influenced the result of both the Lipton and George Cup series in 1926.

It is true that many sloops brought from salt water have been very successful on Lake Ontario, but Toronto boasts a combination that is hard to beat, a boat designed by T. B. F. Benson and sailed by Norman Gooderham. The Nayada and Eleanor won the championships of the Great Lakes in 1924 and 1926 through the skillful handling of Commodore Gooderham. In the 1926 George Cup Races, he sailed the Acadia, an interesting boat because she came from the board of J. W. Roue, the Nova Scotian designer of the famous fishing schooner, Bluenose.

Lake Erie is like its neighbor in that there have been Class R sloops there for some years, but it is only recently that they have attained their present importance. The influence of Eastern boats is obvious for there are more importations than new racers. Edsel Ford's Anker-designed Nordic and the Ardette were among the latest boats to come from salt water. In 1926 the winner of the Inter-Lake Yachting Association races at Put-in-Bay was the old Lightning owned by C. O. Lynch, but the lake was represented in the Richardson Cup series, for the Great Lakes Championship, by Elyria, a sturdy raised-deck craft that George Owen designed in 1916.

At Detroit there is a varied Class R fleet that has had many years of good racing. A noteworthy performance by three of these boats, Neahga, Bernida, and Rascal was the beating they gave a number of large cruisers in the Port Huron-Mackinac Race of 1925, which was sailed in very hard weather.

Chicago is another stronghold of the 20-raters. As in several other places, a cup presented by Sir Thomas Lipton is the most coveted trophy competed for each season. The 1926 winner was Commodore Hollis E. Potter's Calypso, built that year in Germany to Alden's design. The latter has had successful sloops on the lake ever since the class began, for Yank, Mitzi, and Sari came from his board. The last named won the Mackinac Race in 1924 when Benjamin Carpenter, Jr., was sailing her. This race, which is half as long as the New London-Bermuda test, has more than once proved the sea-going qualities of these little racers, and the disciples

of the fisherman school have almost invariably lost to the Universal Rule sloops, whether of Class N, P, Q, or R.

Class R is the important racing class on the Pacific coast. The boats are of a very wholesome type, and the heavy ones at San Francisco are probably the most powerful sailing yachts of their size in the country. This can be said because the winds that prevail

Photo by Rosenfeld

START OF CLASS R AT LARCHMONT

Left to right: Chances, Barbara, Astrild, Fifi, Bob-Kat, Doress and Quiver

on San Francisco Bay are stronger than those on any other body of water in America on which races are regularly held, and for this reason R's of very generous dimensions are built for those waters. To the south, milder conditions are met, and the typical racers resemble the Eastern ones in length.

Charles Nicholson, the resourceful English designer, failed to produce, in the Shamrock IV, a successful 75-footer under the Universal Rule, but the Vancouver (B. C.) R, Patricia, has proved

that he can design a winner under the unfamiliar rule. She and the Sir Tom have sailed many hard-fought contests. The latter boat introduces a very clever designer and skipper in L. E. Geary of Seattle, owner of the Sir Tom and one of the best yachtsmen on the coast. More than once he has won the Lipton Cup over short courses in his R, and he was largely responsible for Invader's winning the 2,000-mile Honolulu race in 1926. From his board have come some very successful 20-raters, notably Thomas Lee's Pirate, Owen Churchhill's Galliano IV, and his own boat.

Another designer of note is Edson B. Schock, who drew the plans for Commodore Weston's Debra, the Aloha, the Heather, and others. These sloops have won many races, particularly at Los Angeles and San Diego, against fast fleets.

Alden's Angela and racers by other men have shown speed, but C. D. Mower designed those that have had the greatest success on San Francisco Bay, where they have kept the Perpetual Challenge Cup. These R's can be pointed out as among the best of any locality, and their fine qualities are a tribute to the merit of the Universal Rule.

To do justice to this class, and to enlarge upon the failings, or much oftener the virtues, of the hundred-odd interesting sloops that constitute it, is not within the compass of this volume. Many places not mentioned here have been the scenes of the best of sport, and many men unpraised have sailed brilliant races to win unrecorded honors. The stories of their triumphs, big and little, are best related by the men themselves; and where yachtsmen gather to exchange those tales so essentially a part of the game, this great American racing class commands more attention than the rest.

EDITOR'S NOTE.—Mr. Streeter, a student at Yale, young in years but old in sailing experience, has written the paper on R sloops in a masterful fashion. His interest in sailing and his knowledge of the wonderful sport are the result of good mental application, hard work, and the opportunities now presented for junior activities, of which he took full advantage. He is the author of several published papers on the value of the junior races, so popular for the past five years in American waters. It has only recently been

appreciated—if the sport is to be continued—how necessary and valuable are the junior departments of regattas. A youth of today has his own small safe boat and is no longer compelled to be cabin-boy on his father's boat. Mr. Streeter is one of the best products of this modern development inaugurated to perpetuate the work of the present-day sailors. He is secretary of the Wadawanuck Yacht Club of Stonington, Connecticut, and a member of the North American Yacht Racing Union. For six years he has been sailing and racing on Fisher's Island Sound and is now sailing the R class boat Chances in addition to competing in other classes. In order to bring the paper up to date and give the readers some additional information about R boats, Mr. Streeter presents this extra note:

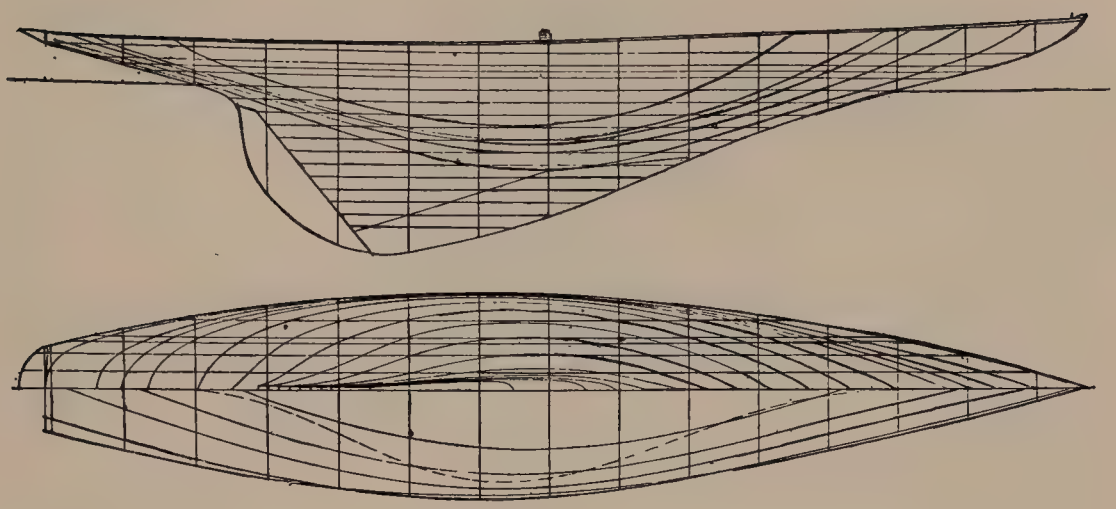
Unfortunately the diversity of R boats and the conditions under which they are sailed make the class a difficult one to generalize on, and I shall merely try to cover the topics mentioned.

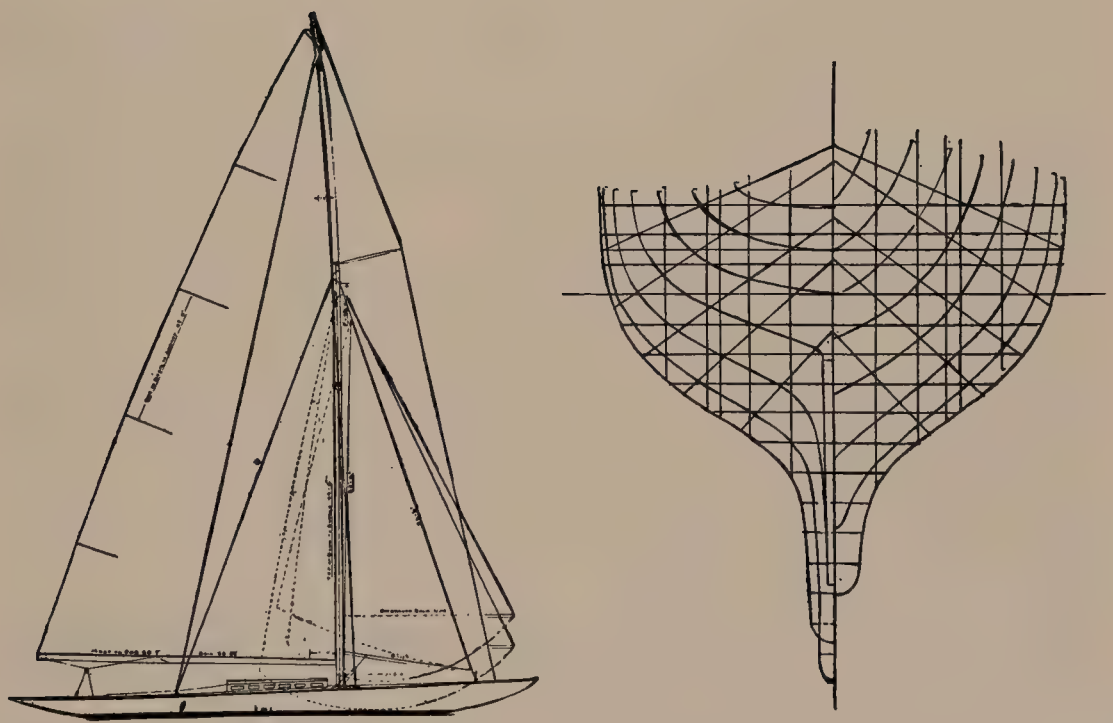
Rules and Agreements: These have varied as to the number of crew on board in races. Four is now customary; although unnecessary for everyday sailing, since I often sail mine with little or no help.

Speed: I have always had an aversion to making sweeping statements concerning the speed of a class of sailboats; too many things have to be taken into consideration. They are not fast like scows under their best conditions, nor slow or dangerous like scows under their worst. They are fast to windward and slow off the wind, but this, like all such information, is only comparative.

Cruising: R boats vary so much that the cruising possibilities of all cannot be covered, but they are being used for cruising far more than either the out-and-out racer or schooner sailor has any idea. I, for one, find mine most satisfactory for my needs; in fact, nothing else would have filled the bill, but I must add that my needs are not those of the average man nor is my boat typical of the class; she is somewhat larger, but the difference is hardly noticeable. There has been a tendency to discredit R's as cruisers that should be counteracted.

Cost: Class R boats have been built and sold at such different figures it is almost futile to quote. They cost between $5,500 and $8,500 to build, and their resale value varies according to all the





LINES AND SAIL PLAN OF CLASS R SLOOP
Frederick M. Hoyt, designer

various forces that control such things; and many strange cases of unsuccessful new boats on which large sums had been spent being sold for ridiculous figures, only to be reconditioned to win races, are often reported. It is safe to say that some of the best values in the secondhand market have many times been R's at $3,000 or $4,000.

Duties of Crew: I feel that any discussion of the duties of the crew would be difficult to insert and not of much value. The pictures, and especially the plans of the Ardette, will make it clear to those interested what kind of gear has to be handled. I also surmise that some of the papers in the book dealing with less elaborate boats will contain much of what I might say.

1927 Season: C. F. Adams's Gossoon repeated and won in both the season's championship and the Ladies' Plate and in addition won the Manhassett Bay Trophy. Of the newer boats at Marblehead, Charles Welch's Live Yankee won races after a slow start, but Frank C. Paine's new Gypsy did not go fast.

On Long Island Sound R. B. Meger's Bob-Kat again won the championship but was pressed by Junius Morgan's new Puffin.

The Vitesse, a new Alden boat owned by W. P. Barrows, proved the best on Lake Ontario, taking the George Cup. Alden scored again when William Warren, Jr., won the championship of Lake Erie with Scorpion.

At Chicago the transplanted Ardelle, now owned by Clarke Wright, went fast in light winds to win the Chicago Yacht Club's championship, but the Lipton Cup was taken by Ariel.

The famous old Sir Tom once more won the Pacific Coast Championship, but in the hard breezes in San Francisco Bay Arthur Rousseau sailed his Ace to victory in the Perpetual Challenge Cup races. She is one of the finest R's ever turned out. Mower designed her.

It is interesting to note that one of the first R's, Swanee (ex-Alpha), now under yawl rig, beat many newer boats in the Autumn Regatta at Chicago, sailed in a hard breeze.

Altogether the R Class more than held its own, despite much propaganda on behalf of the International Rule, and in some localities its popularity doubled.

AMERICAN CATBOATS

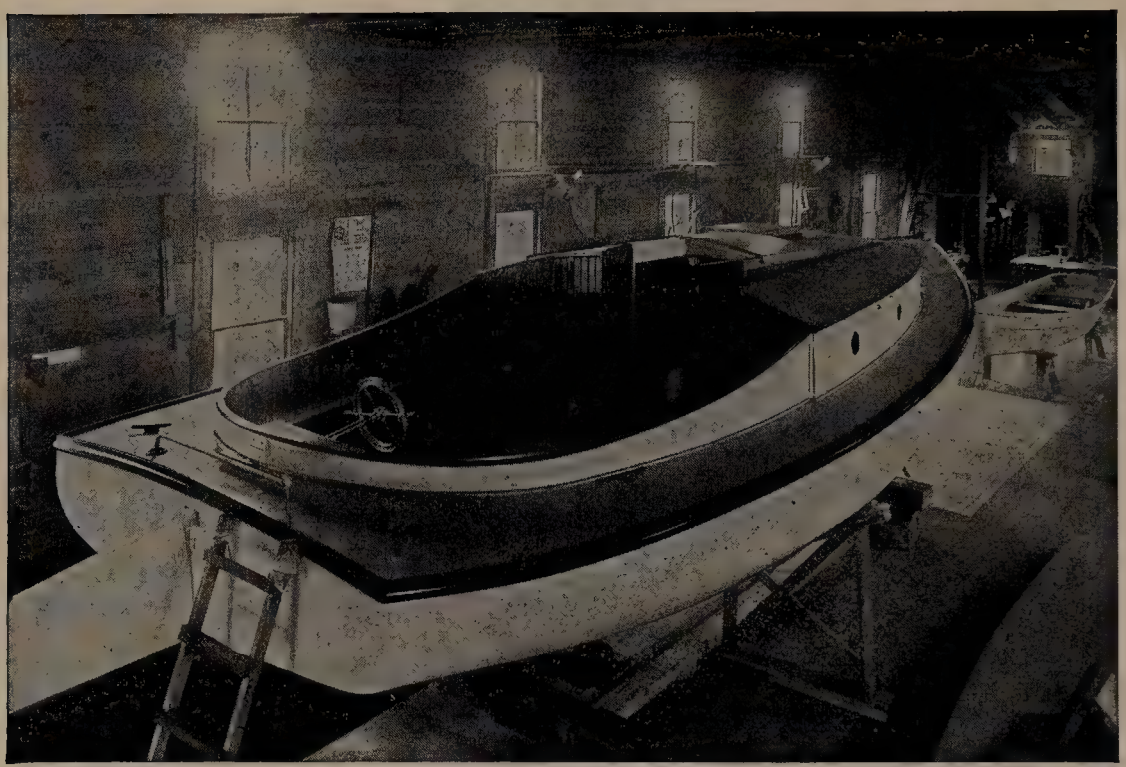
By Edwin J. Schoettle

PROBABLY the most interesting study of boats concerns their early history, the origin of the many types, and the reasons for the existence of each type on different bodies of water. Mr. Kelley wrote in 1884 "No wise man, who is not called in professionally, will for a moment be unwary enough to hint what is the best form of boat; for their number is as various as the conditions which exist, and he who studies may see what the experience of the world has done. For my part, I do not believe there is any one perfect boat—that is, one craft suited equally to every locality; though it is not certain that every place has as yet produced the type best suited to its requirements."

When the foregoing was written work-boats of small sizes were entirely propelled by sail or steam. The gasoline engine was not known, and the necessity of sails with the corresponding ability to handle them produced a picturesque and interesting type of waterman that is difficult, at the present time, to find. The sailors of the world today are 90% sportsmen and paid attendants consisting of professional skippers, boat builders and those making a living at tasks prevalent wherever pleasure sailing is enjoyed.

Up to the end of the last century one of the greatest pleasures of the game consisted of seeking the haunts of professional fishermen and sailors, listening to their interesting yarns and discussing the various problems of sailing. The average amateur of the present

day knows nothing of this joy, but succeeds in getting somewhat the same diversion at his club or in association meetings. The difference can be appreciated only by those who are old enough to have experienced the former privilege and to have felt the contempt of the old salt toward the landsman amateur. What a victory it was to beat one of them in a race or to have proven them wrong in an argument!



PICTURE ILLUSTRATES THE GREAT AMOUNT OF COCKPIT ROOM THAT CAN BE OBTAINED IN A THIRTY-FOOT CATBOAT

It was the work-boat that originally suggested the craft which became the models of our early types to be used for pleasure sailing. Boats throughout the world were as different in sizes and shapes as were the customs of the various people. It would be a great study to solve the why and the wherefore of the existence of all the curious-looking craft used for fishing and commerce. Those at the Fiji Islands, Australia, Bombay, and other eastern ports being the extreme opposite to the models used in England.

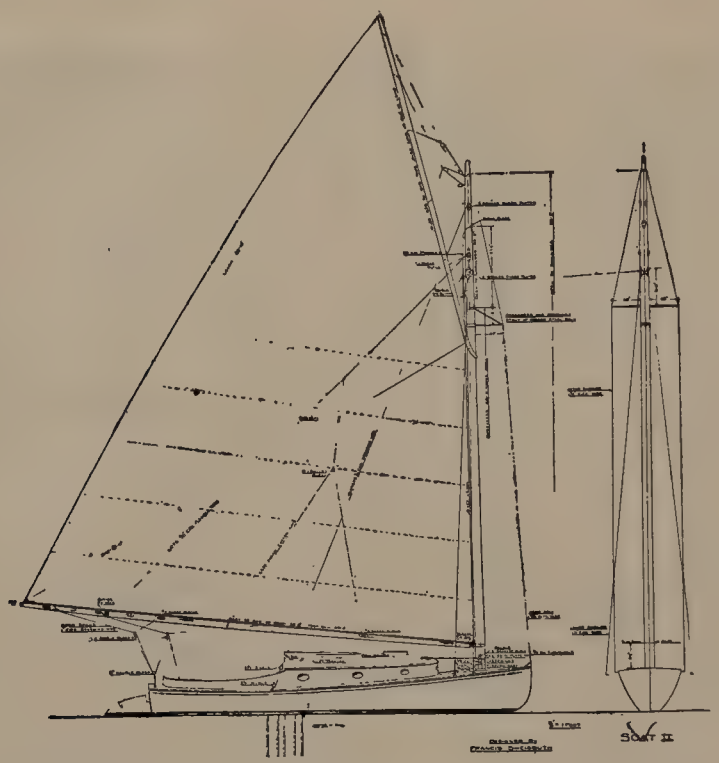
Bermuda over eighty years ago had its own type, schooners, rigged with Marconi masts and jib-headed sails. The Arabian dhow, the most unusual double-hulled boat, was probably the model of some of the earliest American racing catamarans. The English had a score of distinctive types with picturesque titles—Pollywogs, Penzance luggers, Galways, Hockers and many others. Think of the Dutch boats with their curiously shaped fat hulls and heavy

SOME OF THE NINETEENTH CENTURY CATBOATS AT BEACH HAVEN, NEW JERSEY

construction. The Mediterranean had its own, rigged with lateen sails of many colors.

Those in American waters were all different, Boston boats being entirely distinct from those on Long Island Sound. The fishermen of Barnegat Bay developed catboats, sneak boxes, and garveys, and much could be written of the originality of design of these. Chesapeake Bay was known best for its Buckeye, a model very

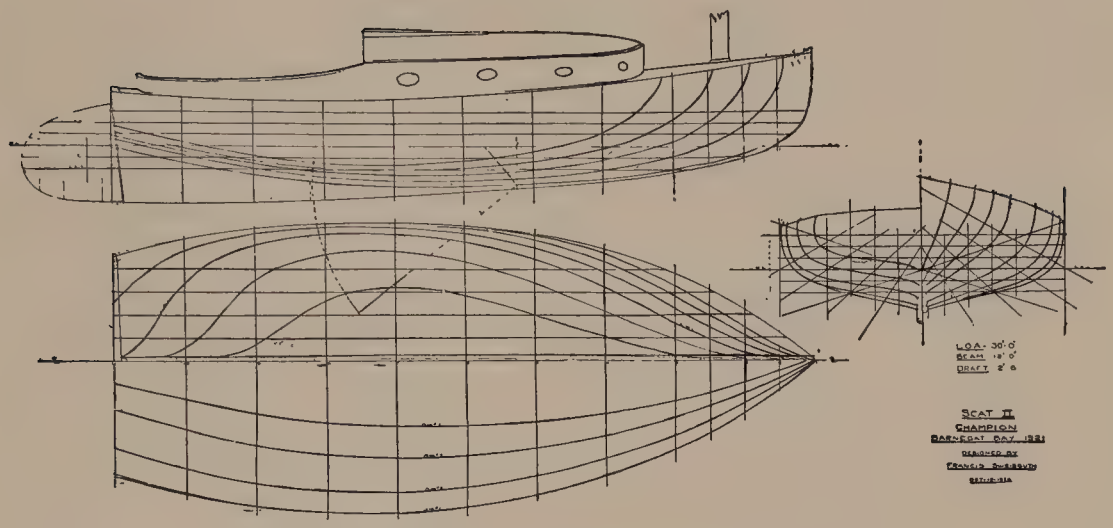
much like the early types used in Bermuda—superficially described as a sturdy hull, double-ended, with two or three raked masts and leg-o'-mutton sails, the forerunners of the modern Marconi rig. South America produced powerful boats built to weather the rough seas, and to use the shallow beaches for landing, with enough good qualities to negotiate the shallow inlets and channels. One of



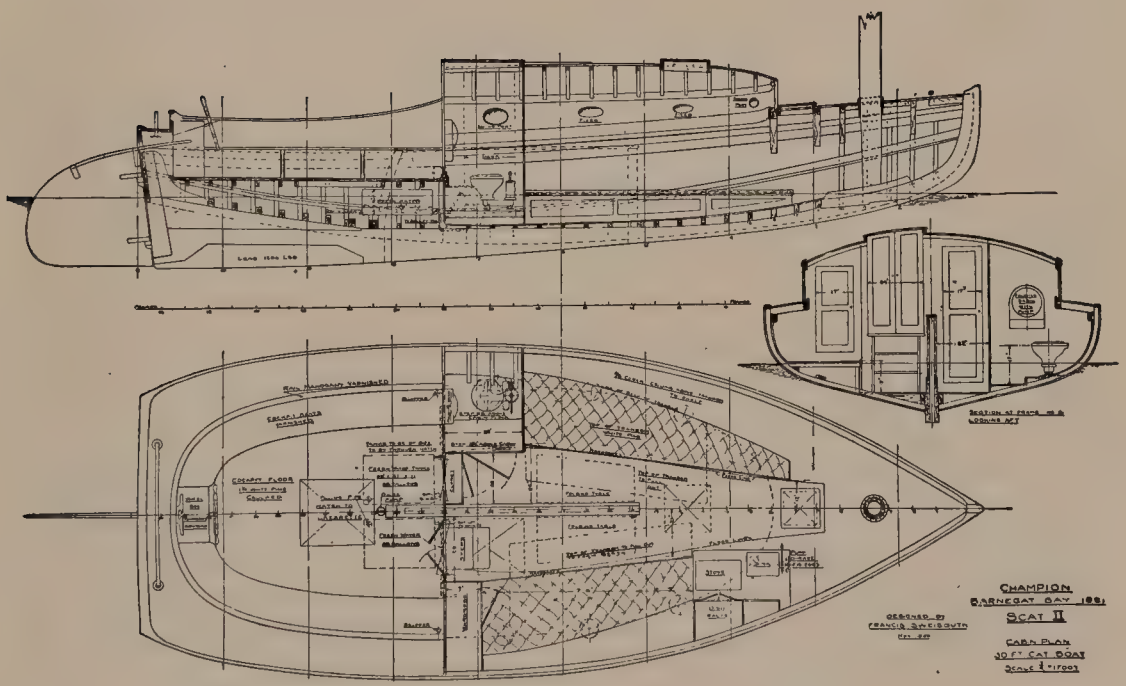
THIRTY-FOOT CATBOAT, SCAT II—SAIL PLAN
Designed by Francis Sweisguth. This boat carried quite easily the mainsail of 900 square feet

these, known as a Buenos Aires whaleboat, was used by two Italians in 1881, who sailed it from South America to the Mediterranean.

No one has solved the reason why these boats differed so much in shape and rig, but it is obvious the designs were somewhat controlled by the character of the waters and the nationality of the early settlers. Later, however, when these boats were carried from their native body of water to one of the others, they were



THIRTY-FOOT CATBOAT, SCAT II—LINES
Designed by Francis Sweisguth



THIRTY-FOOT CATBOAT, SCAT II—ARRANGEMENT PLAN
Designed by Francis Sweisguth. The great amount of room in this thirty-foot boat is a remarkable feature

found to be equally satisfactory, and in some cases much better than those there in use. It therefore stands to reason that the native boats in use in certain waters were not always the best for the purpose for which they were built and used.

In searching for a type that seems from the earliest day to have been distinctly American, we find none that has the importance of the catboat. Dixon Kemp refers to the introduction of this type into England, as follows:

"Those wonderful little crafts called 'Una' boats, were introduced to us in 1853, in this way: The late Marquis of Conyngham (then Earl Mount Charles), was in America in 1852, and in the boat-building yard of Robert Fish (now well known as a yacht designer), saw the boat since celebrated as the 'Una.' He sent her to London by steamer, whence she was transported by rail to Southampton, and then towed to Cowes. The 'Una,' we believe, spent a summer on the Serpentine, but she did not there excite the interest she did at 'headquarters.' In fact, the Cowes people almost regarded the Una as a little too marvelous to be real. To see the Una dodging about on a wind and off a wind, round the stern of this craft, across the bows of that one, and generally weaving about between boats where there did not look room enough for an eel to wriggle, was a sight for the shore people, who had never seen anything more handy under canvas than waterman's skiff with three sails, or an Itchen boat with two.

"In short, the Una with her one sail worked like a steam launch, and no wonder in less than a year there was a whole fleet of Unas at Cowes, and about the Solent. The genus was named Una after Lord Conyngham's importation, and to this day no class of boat is a greater favorite. Lord Conyngham's sailing master, John Hollis, was very perfect in the management of the Una, and waltzed her about as cleverly as a Rhode Island fisherman in many sailing matches; indeed, Lord Conyngham was so pleased with his success, that he presented the clever helmsman with a silver snuff box, bearing a figure of the Una in relief on the lid."

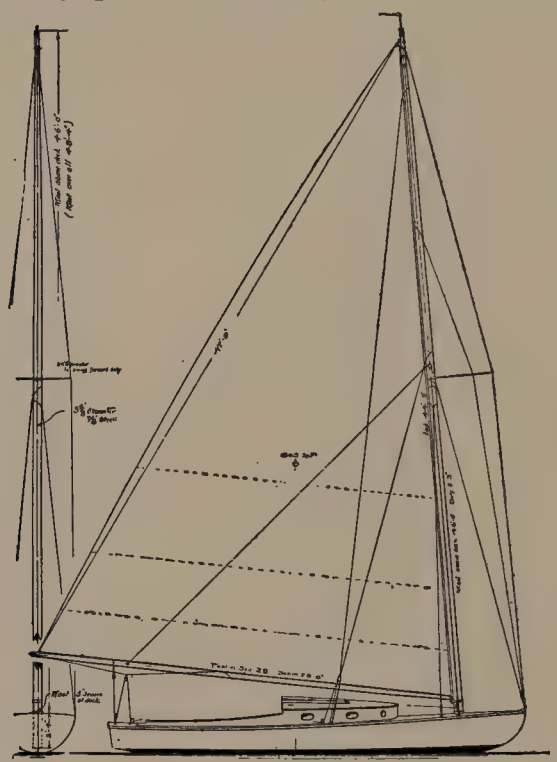
In America, the "cat-rig," as it is termed, is a great favorite, and at Newport, where the rig is mostly seen, the boats enjoy a great reputation for handiness, weatherliness, and speed. There is

Photo Aero Service

TWO TWENTY-EIGHT-FOOT CATBOATS, MARCONI RIGGED, AND A TWENTY-FOOT SNEAKBOX (T/O)

The disturbed water tells a lot about the hull designs and water resistance

no doubt, that the one-sail plain is the best for weatherly qualities, and for handiness—if there be no sea, and if it is all turning to windward. In a sea, however, the heavy mast, stepped so far forward, makes the boats plunge dangerously; and the boats themselves are so shallow that they are not very well adapted for smashing through a head sea. Then, off a wind they are extremely wild, and show a very great tendency to broach to.

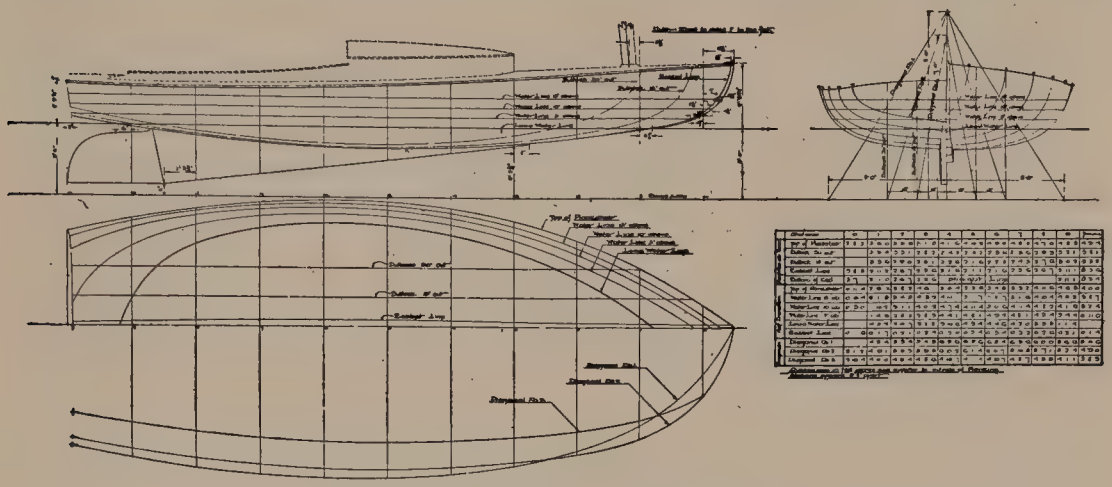


MARY ANN

A famous modern catboat designed by Charles D. Mower

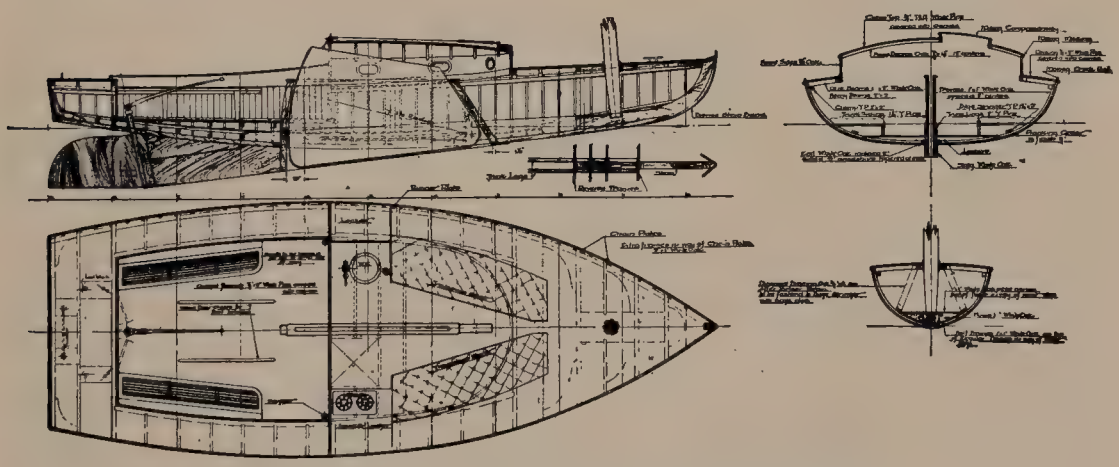
The writers of all books consulted on the subject contend that catboats were built originally on the shores of Long Island Sound or at various places in Massachusetts. It is the writer's opinion that they were in use at an earlier date on Barnegat Bay, New Jersey than on the more easterly bodies of water. The existence of the towns of Tuckerton and Barnegat in the early seventeenth century, and the long period of their complete isolation, on the west side, from Philadelphia and the Delaware River, made them dependent entirely upon their own resources.

The state of New Jersey, which at its widest section covers nearly 100 miles in an east and west direction, was a wild stretch



LINES—CATBOAT MARY ANN
Designed by Charles D. Mower

of unexplored wilderness and cedar swamps, lying as a barrier to transportation between the Jersey seaports and the Delaware River. The little communication that existed was by water, a



ARRANGEMENT PLAN—CATBOAT, MARY ANN
Designed by Charles D. Mower

distance of 250 miles around Cape May Point and north on Delaware Bay and River. The completion of a horse path, or trail,

through the forests and swamps of New Jersey in 1707 presented some other means of travel, but it was not until 1816 that the first stagecoach line was established between Philadelphia and Tuckerton. The few travellers and explorers from the inland to visit the seashore towns in the early eighteenth century were astonished at what they saw. To quote the quaint expressions of one of them: "What large houses are here! What handsome furniture! What intelligent people! What hospitality! I had not expected to see such evidences of thrift and refinement."

This isolation compelled the inhabitants to live on fish and the products of their small farms, the sandy soil of which produced little and made fish the important diet. Reasonably deep channels lead from the ocean across Barnegat Bay to these cities on the mainland or west shore of the bay. The surrounding water, however, was shallow and as a consequence, small boats were early necessary; the distances being as great as they were, sails had to be used instead of oars. Some of the earliest settlers being Dutch, it is safe to assume that they, having had experience in Holland with boats of single sails, would introduce those of like character in their new country and be quick to realize the usefulness of this type of the shallow hand-locked waters of Barnegat Bay. The early prints of the waterfronts of New Jersey show catboats with gaff-rigged sails and hulls, plumb stem with wide transoms and pronounced S frames.

The first sneak box, which was really a catboat, was built at Barnegat, New Jersey, in the year 1836. Fifty years ago catboats were so numerous on Barnegat Bay that the Toms River Yacht Club was formed and its celebrated cup was offered as a prize to be sailed for once or twice a year. The description of the Toms River races is treated separately in this book.

Previous to 1896 the catboats in use on Barnegat Bay were of the "rule of thumb" variety and were built by fishermen, during the long winter months, and by small boat-building shops that dotted the shores wherever there was a settlement. Many of these boats are still in use today, and from their lines it may well be seen that the builders had good ideas of design but failed on the shapes of the sails.

Photo by Johnson Bros.

CATBOAT, SILENT MAID, SHOWING HER SPEED IN LIGHT WIND

In the year 1900 two craft were introduced into the bay that influenced the design and construction of all catboats. Amos Lewis, of Forked River, built the Bouquet, designed by Carey Smith, and the writer imported from Long Island Sound the Scat, designed and built by Wilton Crosby, at Osterville, Mass. At that time, when the Scat was sailed from port to port, she was the cynosure of the eyes of all builders and fishermen. The lightness of construction, the stepping of the mast further aft, the existence of shrouds to support the light mast, the self-bailing cockpit and the built-in cabin with bulkhead, all aroused curiosity and interest. The Scat and the Bouquet were able to give time to their smaller competitors and take time from the larger ones, and at that, beat all comers. They were later eclipsed by the Merry Thought, built by Herreshoff and brought to Barnegat by John P. Crozer of Philadelphia.

During the years 1890 to 1903 the races of the fishermen catboats at Beach Haven, New Jersey, were the most important held in Barnegat waters. It was not unusual to have races with forty or more entries of sturdy craft from 30 to 35 feet long overall. The Merry Thought so outclassed all of these that in one or two seasons the oldtime rivalry and contests were a thing of the past; and to this date they have not been, and never will be restored.

At Marblehead and on Long Island Sound the development of catboats was greater from 1890 to 1905 than that on Barnegat Bay.

F. M. Randall, of the Atlantic Yacht Club, and an eastern man, did more than anyone else in the sailing of catboats, which he had specially built for his own use; and in 1893 he entered some of the New York races with a Crosby cat, 27 feet overall, 18 feet waterline, named Hit or Miss, which in three starts took three first places. Later, in 1894, with the Win or Lose, built by Crosby, 25 feet overall and 20 feet waterline, he won ten races and was second in four, out of a total of fourteen races entered. Mr. Randall followed this, in 1895, with another boat, Ethel, length overall 26 feet and waterline of 18 feet. The Ethel's record was equally good, and her handicaps were large because of the large overhang and short waterline for which she got credit in the rating.

In 1896 Mr. Randall built the Scat (which later became the property of the writer). Her dimensions were about the same as

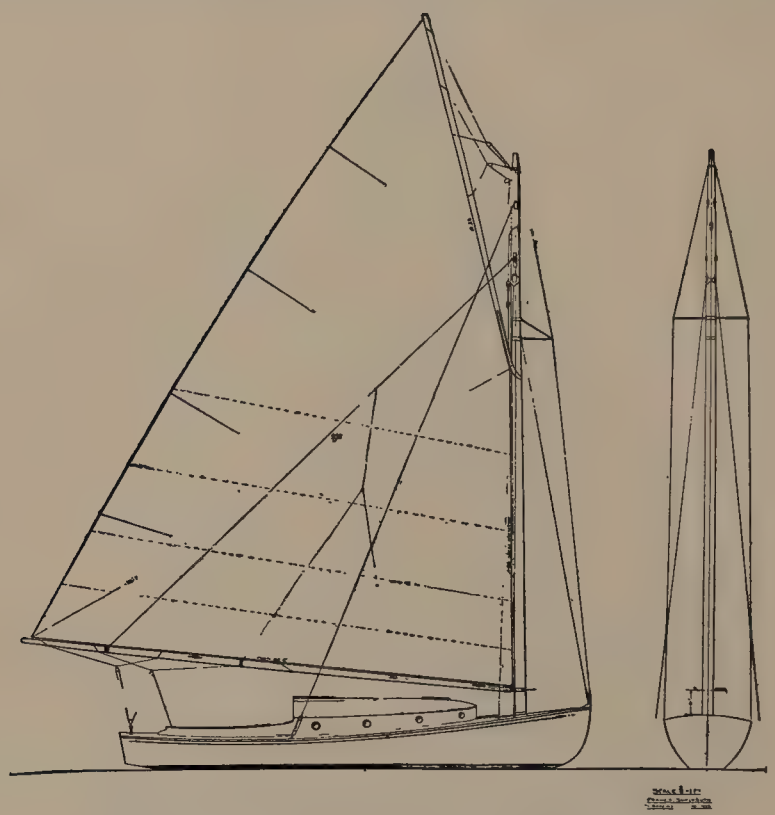
Photo by Johnson Bros.

THE SPY

One of the finest models of modern Marconi rigged Catboats

the Ethel's and her success greater than all the others Mr. Randall had built. These small yachts were so successful they established a class in themselves, variously known as "Cape Cod Cats" and "Crosby Cats."

The Crosby Brothers, six in number, with shops at Osterville, Massachusetts, continued their great success with the type named



SAIL PLAN OF SILENT MAID—GAFF-SAIL
Designed by Francis Sweisguth

for them, because of the excellence of their construction and the value of the designs. It is interesting to note that the Scat, built in 1896 and now over thirty years old, is at present doing duty for racing and pleasure sailing.

The racing of catboats on the Sound was more or less discontinued when Herreshoff built the Wanda for Mr. Fred Bedford, which so outclassed all its rivals that boat builders and owners were discouraged from making further efforts to compete. It would be

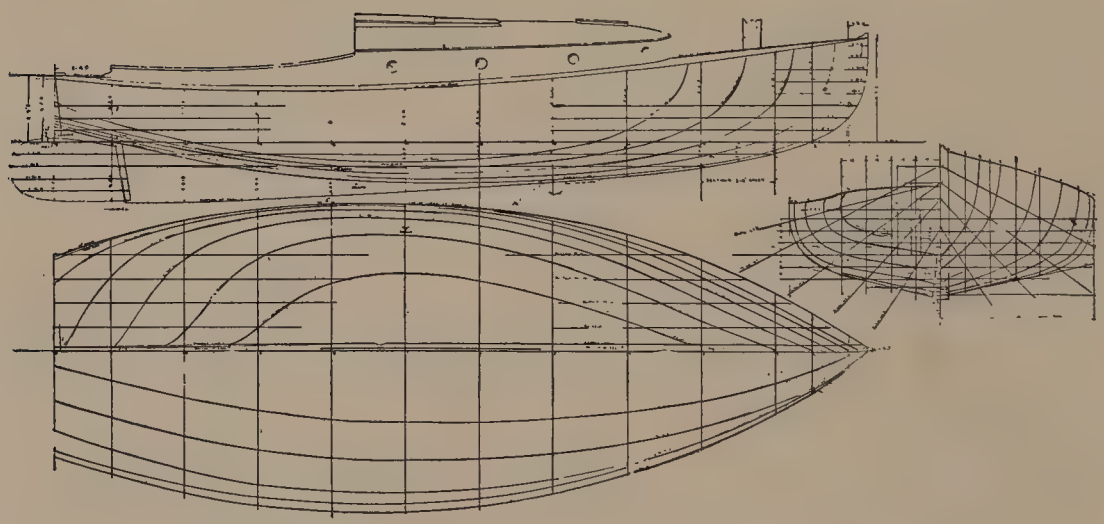
a pleasure to produce the drawings of Wanda, but, like all Herreshoff productions, they are not available.

Herreshoff, when designing Wanda and Merry Thought, created two yachts of entirely different models. The Wanda, lightly built with short waterline and long overhangs, was more or less a racing machine, although in use today. The Merry Thought was just as heavily built as the Wanda was light in construction, and her measurements—length overall 32′, waterline 26′, beam 10′ 8″, draft 2′ 8″—produced a powerful, fast, safe, and heavy weather boat that was as useful at sea as on Barnegat Bay. This is proven by the fact that she sailed many ocean races in strong winds and high seas. The Merry Thought being in service at the present time brings to mind that when Mr. Crozer sailed the boat away from Bristol, Mr. Herreshoff told him it would be a good boat when his grandchildren had children of their own.

It is interesting to state that when these boats were built in the '90's the average builder's price for a 30-foot catboat, completely rigged, was about $1,000 to $1,200. The Herreshoff creations cost over $5,000 each, and for that reason their purchase was limited to men of means. These boats, which eliminated the old-fashioned plumb-stem cats, did so because of the good hull lines that cheated the waterline length, thus guaranteeing generous handicaps, and because of well cut and designed sails too expensive for the fisherman to duplicate. If deck length alone had been used their result would not have been so victorious. If half a dozen boats, well designed, could eliminate hundreds of others from races, is it any wonder that single design boats for races became the vogue in this century?

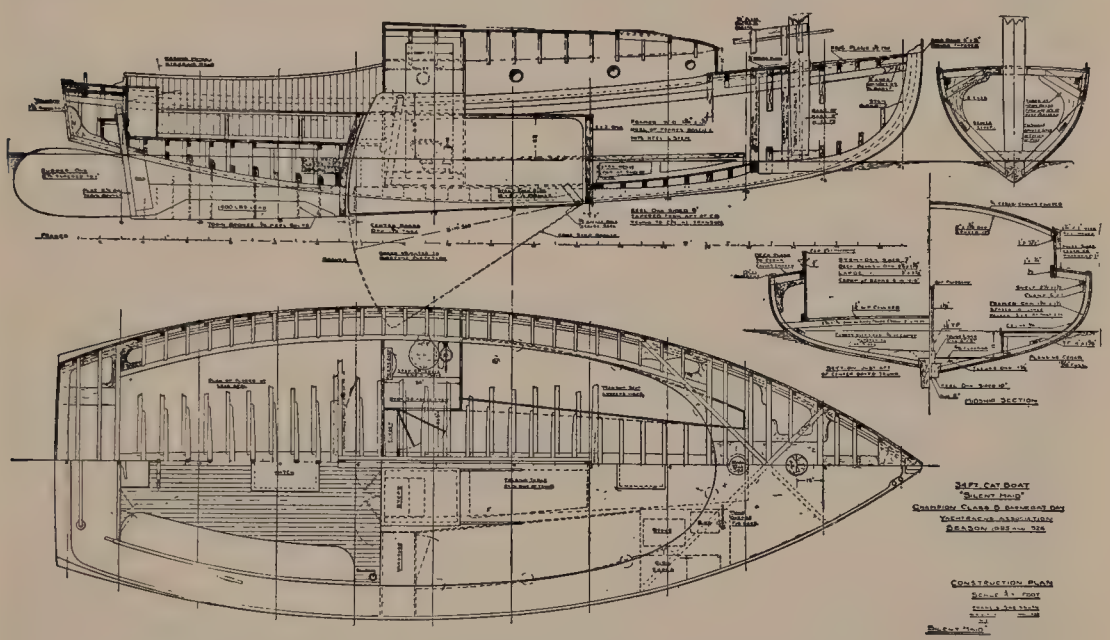
On Barnegat Bay the cruising type of catboat is still in vogue for racing and cruising, and during the past ten years some fine examples of this class have been built. Mary Ann, Bat, and Spy, designed by Charles Mower, and Tamwock, designed by Francis Sweisguth, are the best of the present fleet of those Marconi rigged. Originally, in 1924, when these were built they were rigged with so-called Swedish rigs, with a mainsail very high in the hoist, a gaff about 9 feet long and a boom of 28 feet in length, the hulls being 28 feet overall.

SAIL PLAN OF SILENT MAID—MARCONI RIG
Designed by Francis Sweisguth



THIRTY-FOUR-FOOT CATBOAT, SILENT MAID—LINES
Designed by Francis Sweisguth

Of the larger catboats, Silent Maid, designed by Francis Sweisguth, is an outstanding creation with dimensions of 33′ overall, 28½′ waterline, beam 12′ 6″, draught of 2′ 6″, sail-area 950′. This yacht is all boat from bow to stern, and with her large beam and cabin head room of nearly 6 feet, toilet, galley, self-bailing cockpit, and sleeping accommodations for four persons, is even better equipped for cruising than for racing. Although rigged with a gaff-headed sail, she gives the 28-foot catboats, Marconi rigged,



THIRTY-FOUR-FOOT CATBOAT; SILENT MAID—CONSTRUCTION PLAN
Designed by Francis Sweisguth

nearly eight minutes' handicap in a 10-mile race, at and that can hold her own in a very light breeze and a very heavy one, providing the course is to windward and return. It is impossible to make up the handicap on a triangular course, although her speedier sailing is noticeable on all points of sailing.

Considerable attention in this paper has been given to these modern catboats to acquaint sailing men with the fact that this class represents one of the roomiest, safest, and easiest sailed of present day yachts; a class which is, without question, the best for use in America or anywhere else on inland bodies of water.

This is all written after the writer's thirty years' experience with catboats, and is said despite the fact that Kelley wrote in 1884, when insufficiently informed: "With us the cat-rig is a favorite

Photo by Johnson Bros.

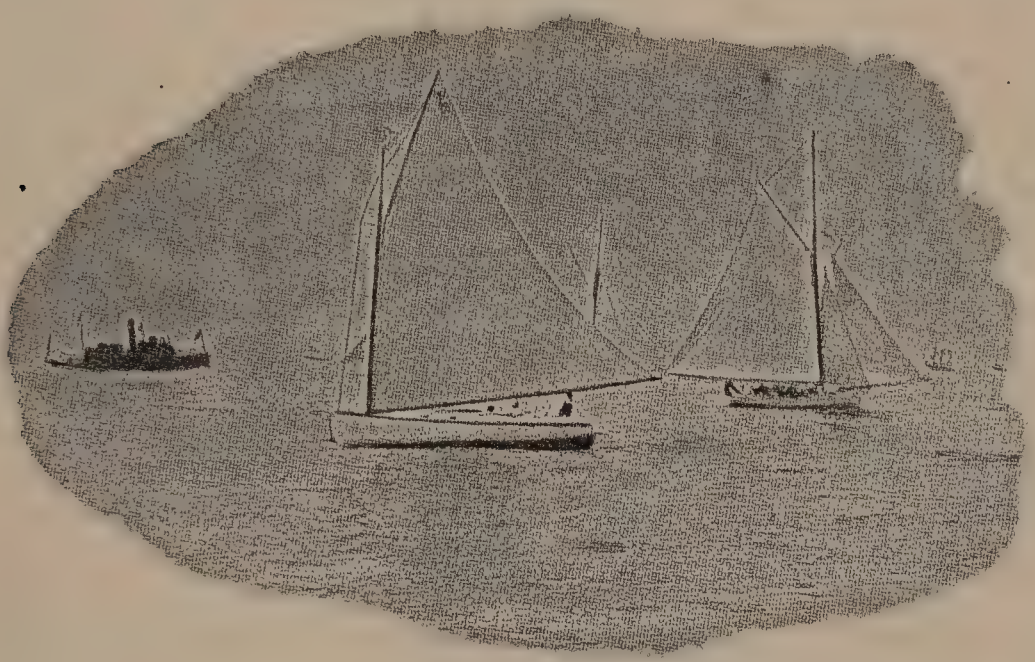
SILENT MAID UNDER TWO REEFED MAINSAIL

She is one of the largest and most powerful of modern catboats

type, because of its undoubted handy, weatherly, and speedy qualities,—many of which are due to the one-sail plan, that is so well adapted to sailing where there is but little sea and much beating to windward in smooth water; but it is a dangerous type—

a bad school for young sailors, a risky one for old—as, in any sea, the heavy mast stepped forward causes the boat to plunge dangerously; in addition the rig is usually too light to go through rough water, too ungovernable off the wind, and has too much of a tendency for steering wild, to make it a safe pleasure craft."

Mr. Kelley would be interested to know that twenty-eight years ago a lone Swede sailed the Scat, 26 feet long on deck, from Larch-



From an old photograph, dated 1896

CATBOAT, SCAT

mont, New York, thirty miles down the East River, through Hell Gate and New York Harbor to Sandy Hook, and then on the ocean 100 miles to Atlantic City. He knew nothing of the lay of the land, was without charts, had the boat loaded with extra spars on deck, three extra sails stored in the cabin, and a rowboat in tow. Despite this handicap and the further fact that he was caught in a storm on the ocean and was three days going from Sandy Hook to Atlantic City, he made port with boat and cargo in good shape.

To all those desiring to build a good all around style of boat, the

writer most sincerely recommends catboats; providing the prospective owner builds a boat, well designed, of good construction and, above all, with a well-shaped sail to assure perfect balance.

EDITOR'S NOTE.—With the exception of a half dozen small craft designed by builders, the boats I have owned and sailed for years were designed by my friend, Francis Sweisguth. It is to him, to his efficiency, and to the extent of his knowledge that I dedicate this short note. While his work for me has been confined to boats of small size, it is nevertheless to his credit to say, as a token of his versatility, that to do large and small craft equally well is an accomplishment he has reason to be proud of; and it is to this part of his work that I wish particularly to pay tribute. Mr. Sweisguth is so thorough and painstaking in his work that it would be almost impossible for him to design a poor boat. As the reader goes through this paper, his attention will be attracted to the many details Mr. Sweisguth has so well covered when designing the catboats described.

To design a fast, well-balanced catboat of any size that will handle well under all conditions of wind and sea is an accomplishment much more difficult than the average yachtsman or amateur designer can appreciate.

The catboat is similar in many ways to the one-cylinder motor. A two-, four-, or six-cylinder motor can miss or have one or more cylinders out of commission and still run. The single-cylinder motor, however, has to run perfectly or not at all; there is no halfway performance possible. This type of boat has only one sail, and there must be perfect harmony between sail and hull. There is no jib, staysail, or foresail, as there is on the sloop or schooner, to correct possible imperfections in the form of hull. The shape of the sail, form of waterline forward, the underwater contour of boat, location of centreboard, above-water shape of hull which determines the listed waterline, all have to be of a certain form and relation to each other to produce a meritorious boat of this type.

The catboat, unlike the racing cutter, schooner, or large yacht, does not owe its early development to the scientific naval architect, because it was popular at a time when most small boats were

built by rule-of-thumb builders. The popular idea that all craft with but one sail are catboats is an erroneous one. The Jersey cricket boat, the Chesapeake skipjack with its triangular sail, the broads wherries, and barges of England, and the boats built for racing which have long ends or other peculiarities to cheat rule measurements, are not cats. These boats, with few exceptions, if rerigged with the mast aft and a jib and mainsail of exactly the same area as the single mainsail, would handle better and sail faster.

Boats to which the above does not apply are the boats of Cape Cod, the Chatham fishing cats, etc. The models of these boats, their cabin arrangement, location of centreboard, great breadth, contour of hull above and below waterline, are such that with the mast stepped in the bow they sail best and do the work for which they were built.

The Scat II's lines were drawn and redrawn until the correct curve of areas was obtained, and great care was necessarily taken to obtain just the desired shape of waterline forward. After the location of the centre of buoyancy was determined, the underwater profile was drawn so that the centre of lateral resistance, even with board down, was aft of the centre of buoyancy, and so that the centre of the centreboard, when down, was aft of the centre of buoyancy. The centre of effort of the sail was placed 5 inches forward of the centre of buoyancy. The separation between the centre lateral resistance with full board and centre of effort is about one inch to a foot of waterline length, consequently, the length of Scat's waterline being 28 feet, the separation is 28 inches.

Boats like Scat II, designed with a square stern, have an inclination to go slightly by the head when heeled to the deck edge in a strong breeze. Although the rounded bow increases the waterline length slightly, her full deck line and buoyant sections forward check the tendency to go by the head, and the extra waterline increases the boat's speed; besides, her large sail, sharp waterline forward, and flat floors make her fast in a light wind. In a strong breeze her powerful quarters and sections, combined with her waterline length, make it possible for her to stand up and sail with speed.

In designing the Silent Maid, it was decided to keep about the same waterline length, but about six inches were added to the forward overhang, and instead of the conventional square stern she was given an overhang of 2 feet, 4 inches. The same fine waterline forward was retained. The extra overall length permitted the waterline aft to be sharpened, thus improving the reaching and running qualities. This extra overall length, especially forward, provided a better and longer list line, more power for windward work, and also eased the helm, when off the wind.

The long waterline with fine entrance, the large sail-plan, and perfect harmony between sail and hull make the Silent Maid fast to windward in very light winds. Her long, flat buttocks, fine run aft, with moderate ratio of displacement to sail-area make the boat also fast reaching in light winds.

In a strong breeze the long, low overhangs and the extra length gained by heeling, as the Silent Maid uses practically all her length when heeled, gives her the power to carry the sail and to go in a breeze much faster than the conventional square stern cat.

This perfection of balance between hull and sail, with the minimum shifting of hull centres when heeled, also helps to give the boat speed when driven hard. No boat can do its best when imperfections of balance must be corrected solely by brute force at the wheel, or by sail trimming.

The Silent Maid's lines, location of board, hull centres, sail centres, etc., are what experience and the analysis of well-known boats of the past have shown to be correct. When designing these two boats, Mr. Sweisguth made an exhaustive search of details concerning all famous boats, known to have possessed more than the ordinary amount of merit. The Silent Maid is the composite result of this work.

CANOEING UNDER SAIL

By Maurice D. Wilt

CANOE—Definition of. A canoe to be registered and to compete in any race of the American Canoe Association, must be sharp at both ends as seen from above, without counter-stern or transom." An addition to the above might be: It must be capable of being propelled by a paddle or paddles, the crew facing forward.

The canoe goes back to the dawn of history, but two or three removes from the floating log or the raft of logs. When the log was hollowed out with rude tools and fire, and the ends were sharpened, the canoe was born. Open canoes have been hollowed logs, frames with skins stretched over them, frames with tree bark put over them, and, in modern times, frames with thin planking fastened to them. These last are the modern Canadian open canoes, first built by Stevenson of Peterborough about 1856. As now built, the planking, about ¼ inch thick, is fitted over moulds, smooth-skin fashion with tight joints; the numerous ribs, thin and light, are then put in, and they are fitted with outside gunwales, thwarts or crossbraces, and very short decks at each end.

The modern canvas-covered canoe, the white man's improvement of the Indian birch bark, was first built some time in the early nineties in Maine. Very thin planking about ⅛ inch thick, with butted ends and edges, is bent over forms the exact shape of the canoe. The joints usually are not water-tight. Thin tapered ribs, about 1½ inches wide at the middle and the same distance apart, are steam bent and clinched to the planking. Canvas is stretched

over the planking, gunwales, and crossbraces, and short end decks are added, the canvas is filled and painted, and the lightest, ablest craft of its size afloat, is finished.

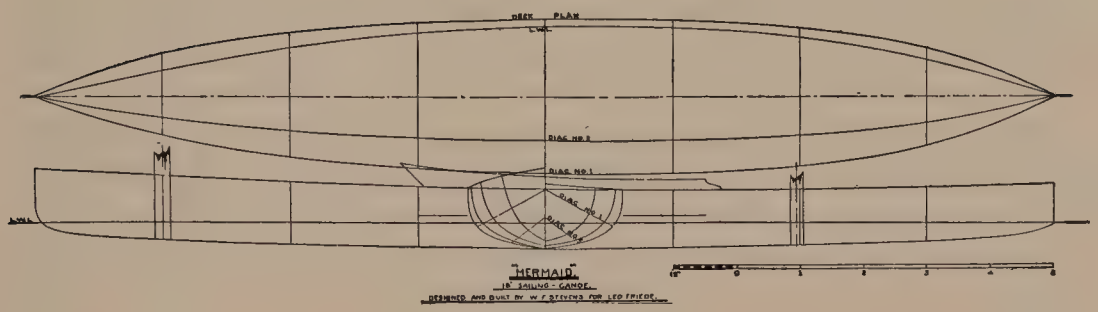
Open canoes, either canvas covered or all wood, have been regularly sailed for about thirty years. No models of open canoes especially designed for sailing have been developed, as the sail, for

ENGLISH CANOE "PEARL," WALTER STEWART, ROYAL CANOE CLUB OF LONDON

One of the challengers for the New York Canoe Club's International Cup in 1886. Series of races won by N. Y. C. C. defenders. "Pearl" carried two balance lug sails. This was the first series of races for the N. Y. C. C. Cup.

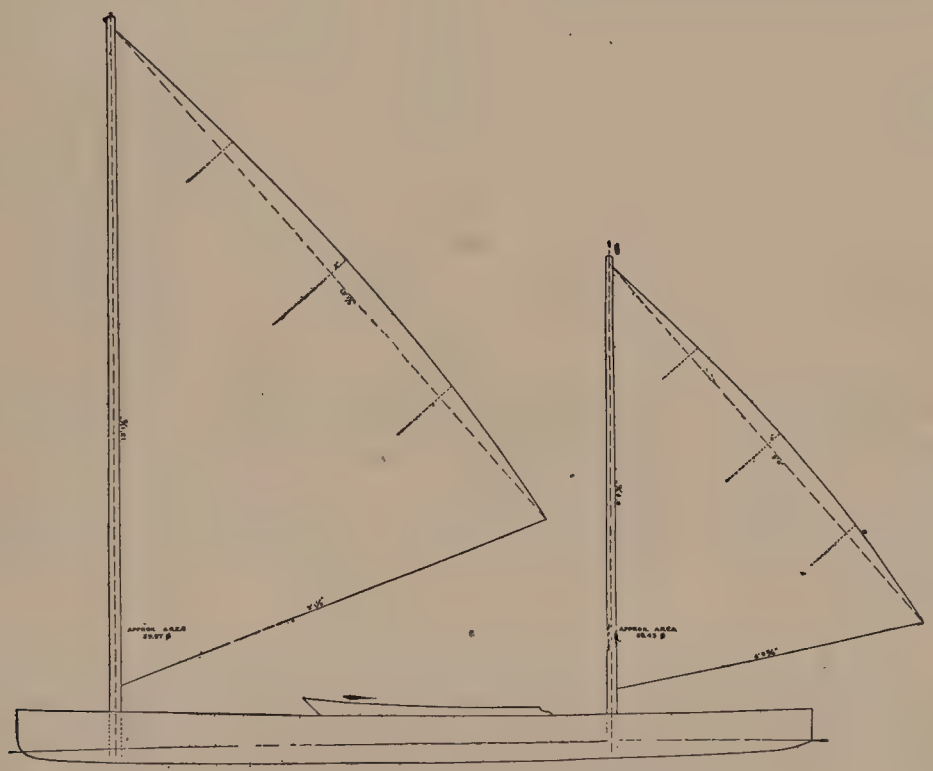
an open canoe, is essentially an auxiliary. To design for its use especially would be to spoil the boat for its main use, paddling. The best model of the open canoe, for sailing, is one with good bearings and a rather full body, about 40 square feet of sail, on a canoe 16 feet long, and 30 inches beam, is the usual rig.

The sail is usually a lateen, in shape nearly an equilateral triangle, with a short, stiff mast, and the boom well cocked up



MERMAID

Sixteen-inch sailing canoe. Designed and built by W. F. Stevens and Leo Friede



SAIL PLAN AS OF 1916—MERMAID

Sixteen-inch sailing canoe. Designed and built by W. F. Stevens and Leo Friede

until it is vertical, and the rig becomes a leg-of-mutton, with all the sail aft of the mast. The yard and boom will each be about 9 feet long. This style of sail is probably better for windward work, the weak point of open canoe sailing.

An open canoe does her best work reaching, followed by running and windward work, in order. A single halliard and single sheet are used, and open canoes are almost always steered with a paddle. Formerly two leeboards were used, attached one at either end of a single crossbar, usually strapped or lashed to one of the crossbraces of the canoe when in use. The modern practice is to use a single deep narrow leeboard, about 10 inches wide, projecting about 18 or 20 inches lower than the bottom of the keel.

The crew of one usually reclines at about the middle of the boat, with his head toward the stern, moving forward when going about, and aft when going down wind. The canoe is kept as nearly on an even keel as possible, and frequently, in a stiff breeze or in a puff, a leg is thrown over the windward side to help hold her down. A well rigged and well sailed open canoe is capable of doing from three to four miles an hour with a good breeze, over a triangular or windward and leeward course, though she can do twice that either running or reaching. This speed is no better, averaging all points of sailing, than can be gotten out of the same open canoe under paddle. In fact, a good paddler can usually average better. All the sailing outfit of an open canoe should be easily and completely detachable so as not to interfere with her main use, paddling. In its most civilized aspect, the open canoe remains a craft best adapted to its original use, paddling, as the beast of burden of the uncivilized lake and stream countries.

Decked Canoes

The decked canoe has developed within the last sixty odd years from a small, comparatively light adaptation of the Esquimaux kayak, usually paddled but occasionally sailed, to a somewhat larger (though still small, compared to other sailing craft), but very efficient one-man sailboat. It is probably not too much to say that a modern decked sailing canoe will give a good sailor, who is also fairly young and active, more thrills than he can get in any other

sailing craft afloat. The reason is not far to seek. The captain of a decked sailing canoe is also crew, helmsman, navigator, sheet tender, ballast and everything else. If he can qualify in the middleweight class, his boat, completely rigged and equipped, will weigh no more than he himself does. She is at once the most sensitive, lively and at the same time, easily controlled sailing craft in existence.

History

John MacGregor, a Scotch scholar and sportsman, was the grandfather of the modern decked canoe. In 1865 he was adjutant of the Scottish Eight, the rifle team representing his country in the National matches at Wimbleton, England. Having been roughly handled in a railway accident, he was prevented from shooting that year. After recovering from his injuries, he decided to get afloat once more, and immediately designed the first Rob Roy canoe, which was launched two months later. He at once started on a cruise that was to cover over a thousand miles of rivers and lakes of continental Europe.

MacGregor describes this canoe as follows: "The Rob Roy canoe was built of oak, with a deck of cedar. She was fifteen feet in length, twenty-eight inches broad, nine inches deep, and weighed eighty pounds. A paddle seven feet long with a blade at each end, and a small lug sail and jib, were the means of propulsion, and a pretty Union Jack was the only ornament. My baggage for three months was in a black bag, one foot square and six inches deep. The cockpit was three feet long and eighteen inches wide, and there were two bulkheads, six feet apart." This canoe had practically no shear.

MacGregor made two long cruises after that, in other Rob Roy canoes, in essentials similar to the first one. One cruise was of nearly equal length in Sweden and Norway and across the entrance to the Baltic Sea, the Skagerrack, to Denmark. The other voyage included in its log, the Nile, the Red Sea, the Sea of Gennesareth, the Jordan, and several other rivers and lakes in the Holy Land. In all these cruises, the sails as well as the paddle were used.

This indefatigable Scot not only made these long trips—alone, mind you—but he wrote about them four fair-sized books. These were so popular that they went to five or six editions, not only in England but in America. He practically founded a new sport, and canoeing soon numbered its devotees by hundreds, and later by thousands, both in England and America.

SAIL PLAN

Seventeen-foot decked sailing canoe. Designed by Hilding Froling

These early decked canoes, Rob Roys, were not much as sailing craft. They were too low in the water, had too little bearings, and were altogether too wet in anything but pretty fairly smooth water. Also they were steered by paddle alone, a very ineffective method. There were soon developed boats a little wider, and somewhat deeper, with considerable shear, much better sailers, but still fairly good paddlers. They were built with fairly deep keels, carried considerable ballast and were steered by rudders.

Early American Voyages

A little later, three notable canoe voyages were undertaken by American canoemen. In 1874 Nathaniel Bishop, who was afterwards one of the original members of the American Canoe Association and its first secretary, started at Quebec a cruise that ended on the west coast of Florida. His canoe was the Maria Theresa, of the English Nautilus type, 14 feet long, 28 inches beam, depth amidships 9 inches, bow 23 inches high, stern 20 inches. This canoe was built by E. Waters & Sons of Troy, N. Y., of overlapping sheets of paper, built up to ⅛ inch thick. She weighed empty, 58 pounds, much less than the English canoes. Bishop followed the inside Sounds and Bays of the coast line from the mouth of Delaware Bay until he got to Florida, where he crossed the northern part of the state. The total length of the trip was about 2,500 miles. For the first 500 miles he had a companion, who stopped at Troy, N. Y. Bishop's book describing the trip is called *The Voyage of the Paper Canoe.*

The next year, Bishop made another voyage of about the same length, described by him in his book, *Four Months in a Sneakbox.* The boat, a Barnegat Bay sneakbox, was 12′ 0″ long, 4′ 0″ wide, and weighed 200 pounds. When not sailed, she was rowed, not paddled. This trip started at Pittsburgh, Pa., and followed the Ohio and Mississippi Rivers and the Gulf Coast eastward to the Suwannee River. As in the first voyage, Bishop travelled alone.

These long, solitary voyages southward apparently exercised a strange fascination over the early A. C. A. secretaries, for in 1882, Dr. Charles A. Neide, who succeeded Bishop in that office, started at the finish of the Lake George Meet of that year in an American Princess model canoe built by J. H. Rushton of Canton, N. Y. The Aurora, as Neide's boat was called, was 15′ 0″ x 31″, depth amidship 9″, bow 19″, stern 17½″, cockpit 6′ 0″ x 21″, weight (empty) 85 pounds, again a relatively lighter boat than the English cruisers. Neide, however, had a companion, S. D. Kendall, who had built his own canoe 14′ 9″ x 3′ 0″. They started north on Lake George, through part of Lake Champlain, the Champlain

Canal, Mohawk River, and Erie Canal to Buffalo, thence by land to Olean, N. Y., and to the headwaters of the Allegheny River. After reaching Pittsburgh their course was the same as that of Bishop's second voyage, but ended at Pensacola, Fla. It is to be noted that Neide's canoe was quite a bit larger than Bishop's first boat; also Neide did considerably more sailing than Bishop, as his boat was much better adapted for the use of sail.

Early American Canoes

About 1868, several Englishmen, among them Messrs. W. Baden-Powell, Walter Stewart, and E. B. Tredwen, became interested in the possibility of developing better sailing qualities in the decked canoes. Baden-Powell's Nautilus No. 2 was the first model designed mainly for sailing. She had good beam, considerable shear, a well-crowned deck, and carried two sails, the larger, a standing luf, being forward. The paddle was still the means of steering. The rudder was introduced soon afterward, with lines and attached to a yoke, or to pedals in the fore part of the cockpit, the actual steering being done with the feet. The sailing was done with the crew sitting or lying on the floor-boards.

The lines of Nautilus No. 4 were brought to America by a member of the New York Canoe Club, and in 1870 the first canoes of this sailing type were built by James Everson of Williamsburg, N. Y. Several good canoes of the Nautilus or a similar type were also built by a Mr. Jarvis, an English builder of canoes and rowing boats, who came to the United States and located near Ithaca, N. Y.

Very soon after the sailing canoe was introduced into the United States, its type began to diverge from that of the English canoes. The English designs became deeper and somewhat wider, with fuller bodies and deep ballasted keels or heavy centreboards. Frequently they carried considerable inside ballast as well. Their racing rigs were often one large sail, usually a balance lug. The centreboard, if one was used, was well forward, leaving the cockpit clear, for sleeping purposes. The large board forward was frequently balanced by a smaller board aft, or by a deep dropping rudder, or by both. The cruising rig was usually a balance lug forward,

The Sailors' Dock at Sugar Island

The American Canoe Association's headquarters in the Thousand Islands, St. Lawrence River, seven miles from Clayton, N. Y.

considerably smaller than the racing rig, and a small dandy aft. The jib disappeared. As they were almost always sailed with the crew in a reclining position, the decks at the location of the crew's shoulders were often fitted with hinged flaps, so that the sailor could lean further to windward, when reaching or on the wind.

Some of these features were found in the early American sailing canoes, as long as the American canoe sailors remained below deck in the English fashion. It was not very long, however, until the American sailors were sitting on the windward deck, at first during reaching and windward work only, but finally at all times. Almost immediately the necessity for the big-bodied heavy canoes, with heavy centreboards and inside ballast disappeared. The crew was his own ballast, carried in the most advantageous position, well out on the windward side. The canoe could be built lighter, with finer lines, and it was easier to handle both afloat and ashore, because of its lessened weight, and much safer in case of a capsize.

The deck position was decidedly uncomfortable, however, if there was a stiff wind blowing, causing considerable strain on the back and legs; but it was so much more effective than the reclining position that it was almost always assumed in spite of its comparative discomfort under certain conditions of wind and sailing.

In the early part of this history John MacGregor was called the grandfather of the decked canoe. The father of the modern canoe sailing was Paul Butler, who joined the American Canoe Association in 1885. His club was the Vesper Canoe Club of Lowell, Mass. His friend, H. Dudley Murphy of Lexington, Mass., himself a noted canoe sailor, pays this tribute to Butler's memory. It is quoted in part: "Few in this generation realize to what extent the sport of decked canoe sailing is indebted to Paul Butler. In the early days the canoe had no bulkheads, nor self-draining cockpit; it was unmanageable after an upset, could carry only some fifty or sixty square feet of sail, with the sailor sitting on deck, and was steered by means of rudder chains and a short fore and aft tiller. Butler, weighing only one hundred and ten pounds, invented the cross sliding deck seat, added bulkheads, self-draining cockpit, and the Norwegian tiller (a thwartship tiller with a rod to the rudder head), and invented the most wonderful hollow spars

ever made. He invented the clutch cleats for the sheet lines, reefing gears, and many other appliances used with the enormous sails carried before sail-area was limited. From a craft little better or more seaworthy than our present open cruising canoe, he developed by his inventive genius the fastest sailing craft for its displacement that the world has ever seen, a seaworthy, unsinkable boat capable of a speed of fifteen miles an hour. He designed his own boats,

AMERICAN CANOE, ECLIPSE

Sailed by Reginald S. Blake, Brooklyn Canoe Club, against Walter Stewart, Royal C. C., in canoe Charm, in the second series of races for the N. Y. C. C. Cup in 1888. Series was won by Blake. Eclipse carried batswing sails. This picture taken at the A. C. A. meet at Lake George, N. Y., in 1886.

and started W. F. Stevens, a shell builder, to building canoes that after thirty-five years are still in fine condition and among our fastest. Every man who has sailed on a sliding seat in a good breeze of wind and experienced the thrill of the speed owes a debt of gratitude for the invention and development of the finest of all water sports to the memory of Paul Butler."

The cross sliding seat makes it possible for the light man, by getting a little farther out on a long seat, to hold up his boat in blow, just as effectively as can a heavier man. The thwart-

ship tiller, built a little longer for the lighter man, is just as handy to use as it is for the heavier man and the clutch cleats make it possible to release the sheets, when needed, just as quickly by a push with the toe of one's shoe as it is possible to do by hand. There were bulkheads before Butler's time—in fact, as we have seen, the original Rob Roy had them—but that is a very slight error in a wonderful tribute to a wonderful man.

By 1887 Butler had begun his experiments, and in 1892 he scored his first win of the American Canoe Association Sailing Trophy, the most prized trophy open to the canoe sailor, except the International Challenge Cup.

The effect of Butler's inventions began to be felt from about 1890 on. The long deck seat, the thwartship tiller, and the tight self-draining cockpit made it possible to increase the sail-area to an enormous extent, and with entire safety. At that time and for several years after, there was practically no limit to any element of the decked sailing canoe, except the length overall and the extreme beam. The standard size, practically universal, was 16 feet overall length, and 30 inches extreme beam. On a boat of that size, two sails were carried, the total area being anywhere between 130 and in some cases 180 or 190 square feet. The writer saw a race sailed in 1894, in which the winner capsized nine times during the race and righted his boat every time, with no more inconvenience than a wetting to himself and his sails. This case, of course, was exceptional, the competition was not very keen, and he lost some time at every capsize in righting his boat, perhaps 30 or 40 seconds, but it shows of what the canoes were capable.

Like almost every unlimited class of sailing craft, these extreme canoes in a few years developed themselves out of existence. The huge batswing sails got to be so hard to hold up, in the extreme sizes, and the hulls of the boats had to be so strongly built, and consequently heavy to stand the various strains imposed upon them, that they became useless for anything but match sailing. They were too heavy for easy transportation, and they were entirely too expensive to build and maintain. Then a limit was placed on the total sail-area, first of 130 square feet, then of 110, and finally of 90 square feet—the amount allowed today to a 16′ 0″ x 30″ canoe.

The present day sails are light, finely cut, and made, leg-of-mutton or jib-headed standing sails, laced to boom and mast. The masts are limited in length to the overall length of the canoe, and not more than two-thirds of the total sail-area may be in any one sail. The sails usually have a 3- to 4-inch roach on the leech and carry three or four light battens about 18 inches long.

A first class modern decked sailing canoe costs at the present time about $300 to $350 complete with one set of sails, spars, hollow masts, sliding deck seat, hollow thwartship tiller, cast aluminum vertically dropping centreboard, and aluminum rudder and brass fittings.

Canoe Clubs

When John MacGregor returned from his first long cruise and published the story of it in the book called *One Thousand Miles in the Rob Roy Canoe*, the new sport began to gain popularity at once, and the need of organization began to be apparent. The Royal Canoe Club was organized in July, 1866, and by June, 1867, the club had a membership of over 100. H. R. H. the Prince of Wales was Commodore, and John MacGregor was Captain. Its objects were stated with commendable brevity, in eight words: "To improve canoes, promote canoeing, and unite canoeists."

In the United States the growth and development of the sport was only a little behind that in England. In 1871 William L. Alden, at that time a member of the editorial staff of *The New York Times*, and several of his friends, all ardent canoemen, met and organized the New York Canoe Club. Several of them were newspapermen, so that the club did not lack publicity from the start. The membership grew slowly but steadily for several years. The club had no house at first, very little racing was done, and most of the activities centred on cruising. The first clubhouse was built in 1879, at St. George, Staten Island. The New York Canoe Club was the first canoe club in the United States, but others soon followed. In 1880 there were eight or ten clubs in the eastern United States, by 1885 the number had more than doubled, and by 1890 it had tripled. Some lasted but a few years, others of these very early ones are in existence today, along with many new ones.

The American Canoe Association

In 1880 a call for a general convention of canoeists was issued by twenty-four leading devotees of the sport. The convention took the form of a camp at Crosbyside, Lake George, N. Y., on August 3, 4, 5, and 6. Sailing and paddling races were held each day, and the American Canoe Association was founded at a meeting in the boathouse at Crosbyside.

Another Picture of Leo Friede, Sailing Mermaid
Picture taken at Gravesend Bay, N. Y.

The first officers were W. L. Alden, Commodore; Nicholas Longworth, the father of the present speaker of the House of Representatives, Vice-Commodore; R. D. Wynkoop, Rear-Commodore; N. H. Bishop, Secretary; J. M. Meredith, Treasurer. The names of these officers, together with the names of ten other members, appear as the founders of the A. C. A. on a tablet erected at Crosbyside on June 26, 1921.

By 1883 the association numbered over 200 members, and by 1888 well over 1,000. Camping and racing meets of the association have been held every year since 1880. In 1887 a geographical division form of organization was perfected, and in the yearbook for 1888 appear the names of the Central, Eastern, Northern, and Atlantic Division officers and members. Two other divisions have since been added, the Western and the Delaware-Chesapeake. The Western division was the old Western Canoe Association, which had been a separate organization of canoeists of the middle western states, centred chiefly around Chicago, Cincinnati, and Milwaukee. It joined the A. C. A. in 1900. The divisions hold annual camping and racing meets and cruises, in addition to the general association meet.

The A. C. A. general meets have been held all over the northeastern United States, but generally on the St. Lawrence River, among the Thousand Islands, and in two years farther north, in Canada.

In 1902 Sugar Island, in the St. Lawrence River, one of the Thousand Islands, about seven miles from Clayton, N. Y., was bought from the Canadian government. Sugar Island is about forty acres in area, very irregular in shape with bold, rocky shores indented by several deep bays. There are three or four small sandy beaches, and one meadow a few feet above the water level, about four acres in extent. At the edge of this meadow under the trees are pitched each year the headquarters tents and the big mess tent. A concrete dock about 100 yards from headquarters makes the landing from large motor boats or from the smaller river steamers very easy. It is an ideal spot for camping, surrounded by ideal waters for cruising or racing, either with sail or paddle.

The A. C. A. meets were held at Sugar Island annually from 1903 to 1925, inclusive, and again in 1927. The meets are always held in August; they last two weeks, and the average attendance is about 250. Members and their guests may, however, camp on the island at any time.

The 1927 yearbook contains the results of forty races and four other contests, which were held at the meet in 1926 at Turtle Island, Lake George. Of these races fifteen were for sailing canoes

both open and decked, and twenty-five were for paddling canoes of different classes with crews of one, two, four, and nine paddlers. There were still more races in 1927 when the A. C. A. went back to Sugar Island.

International Sailing Races

In 1885 the New York Canoe Club offered the International Challenge Cup, a perpetual challenge trophy for sailing canoes. The cup may be challenged for not oftener than once each year by any regular organized canoe club outside of the United States. Each contest is a best two out of three affair, and each race is not less than eight nor more than ten miles.

In 1886 at the A. C. A. meet at Grindstone, Thousand Islands, Warrington Baden-Powell, with his canoe, Nautilus, and Walter Stewart, canoe Pearl, guests of the A. C. A., sailed by invitation, in the race for the A. C. A. Trophy, 7½ miles. They finished eighth and ninth, respectively, in a field of fifteen. Both Baden-Powell and Stewart were members of the Royal Canoe Club and had challenged for the N. Y. C. C. Challenge Cup. The races were sailed after the A. C. A. meet, over the N. Y. C. C. course. The cup was defended by C. Bowyer Vaux, canoe Lassie, N. Y. C. C., and William Whitlock, canoe Guenn, Brooklyn C. C. The challengers were defeated. Both defenders sailed comparatively light canoes in the on-deck position, as did also Stewart of the challenging pair. Baden-Powell sailed in the reclining below-deck position. Vaux is still a member (honorary life) of the New York C. C. and a life member of the A. C. A. These races marked the beginning of international competition in canoe sailing.

Stewart challenged again for the International Cup in 1888 with a new canoe, Charm, and was again beaten, this time by Reginald S. Blake, canoe Eclipse of the Brooklyn C. C. Since that year, no Englishman has challenged for the cup, but there have been several races for it notwithstanding.

In 1890 Ford Jones of the Brockville (Canada) Canoe Club challenged. He and his canoe, named Canuck, had a good record in A. C. A. sailing races, but he was beaten for the International Cup by H. Lansing Quick, canoe Uno. Quick is a member of the

Yonkers Canoe Club, a life member of the A. C. A. and for several years past has been president of its Board of Governors.

In 1891 Jones again challenged for the Cup with the same canoe, and was again beaten, this time by T. E. H. Barrington of the N. Y. C. C. in the canoe Toltec. Jones was persistent, and he had the right to be, for he had won the A. C. A. Sailing Trophy in 1890 and 1891, with Canuck, so he challenged again in 1892, but

AMERICAN CANOE, MERMAID

Owned and sailed by Leo Friede, N. Y. C. C., in two series of races for the N. Y. C. C. Cup in 1913 and 1914. Both series were won by Friede. Ralph B. Britton, Gananoque C. C., Gananoque, Ontario, Canada, was the challenger in both series of races. Friede has won the American Canoe Association Sailing Trophy in this canoe eight times. Mermaid carries ninety square feet in two standing leg o' mutton sails.

was again beaten by another Yonkers C. C. man, T. S. Oxholm in canoe Glenwood. Oxholm is a member of the Yonkers C. C. and of the A. C. A.

There were no more international races until 1895, when Charles E. Archibald, Royal Canadian Yacht Club of Montreal, winner of the A. C. A. Sailing Trophy in 1894, challenged with the canoe Mab. He was beaten by Paul Butler, Vesper C. C. in Wasp.

This was the last race for the International Cup until 1913, when Ralph B. Britton, another Canadian, a member of the Gananoque Canoe Club, winner of the A. C. A. Sailing Trophy in 1912, challenged with the canoe Jonah. He met the same fate as all the rest of the challengers, being beaten by Leo Friede, canoe Mermaid, a member of the New York C. C.

In 1913 Friede and Britton had sailed on pretty even terms in the A. C. A. races at Sugar Island, so Britton again challenged for the International in 1914 with a new canoe, Tomahawk, but was again beaten by Friede in Mermaid. Since 1914 there have been no races for the International Cup.

This is probably as good a place as any to note the record of Leo Friede. He has probably won more important sailing canoe races than any other man living or dead. In addition to many others, he has so far won the A. C. A. Sailing Trophy eight times, in 1914, '15, '16, '20, '22, '25, '26, and the International Cup twice. There were no Trophy races sailed in 1917 and 1918. He did not sail in 1927.

American Canoes and Their Builders

Two or three of the early American canoe builders have been mentioned early in this history. Everson's advertisement appears in several early A. C. A. yearbooks, the last one in 1892. In the 1888 yearbook appears the ad. of Charles Piepenbrink of Albany, N. Y. He built Notus, the canoe that won the A. C. A. Sailing Trophy in 1886–87, sailed by R. W. Gibson, 1886 being the first year that it was sailed for. Gibson became commodore of the A. C. A. in 1888. J. H. Rushton of Canton, N. Y., seems to have been the earliest builder of stock canoes. His advertisement appears in the *American Canoeist* as early as October, 1883, and perhaps before that. He must have been pretty well established even then, as he lists four different models of cruising canoes, three of them decked and rigged for sailing, and offers a 36-page catalog of canoes and pleasure boats. Rushton and his son carried on the business until about ten years ago. He built fine boats and canoes, many of which are still in service. Thomas Kane and Son of Chicago, the Fulton Pleasure Boat Co. of Fulton, N. Y., the Bowdish

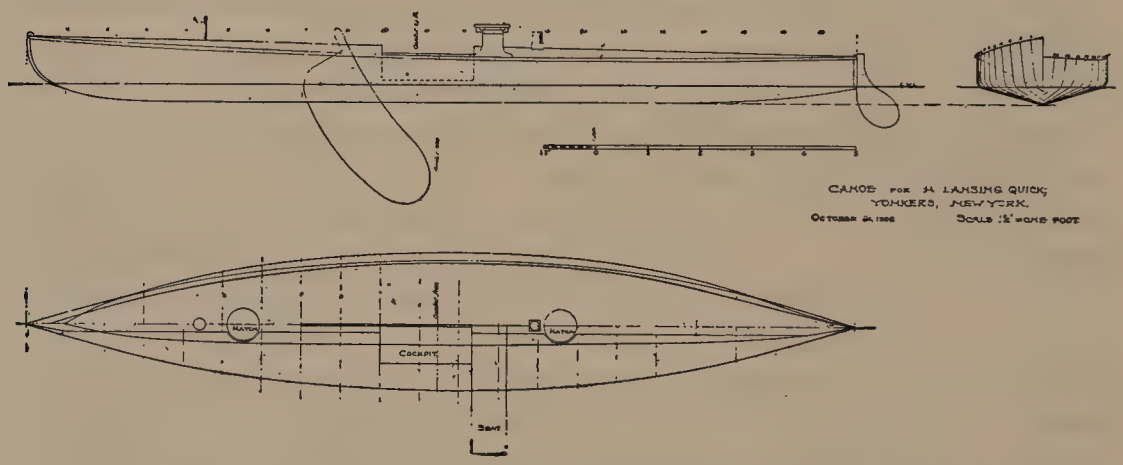
Mfg. Company of Skaneateles, N. Y., Ontario Canoe Company, and William English Canoe Company, both of Peterborough, Ont., St. Lawrence River Skiff and Canoe Co. of Clayton, N. Y., and F. Joyner, all advertised at one time or another as canoe builders. Most of them built decked sailing canoes only to order, though some kept two or three models in stock. There was good reason for this. In the early days and to considerable extent even yet, canoeists were and are as strongly individual in their preferences as ever yachtsmen were, before the days of one-design classes. Sixteen feet by thirty inches became almost a standard size, but the designs were almost endless, hardly any two being exactly alike.

About 1886, E. H. Barney of Springfield, Mass., a man then nearing fifty years of age, designed and built Pecowsic, a light, fine lined boat, very well built. She was one of the very earliest entirely unballasted canoes, and one of the earliest if not the very first canoe to carry standing sails, that is, sails laced to light tapering masts and booms, with no halliards, topping lifts, or reefing gear. Barney had several sails of different sizes, the lower ends of all the masts being the same size, so as to fit in any of the three mast tubes. Occasionally three sails were carried, but generally only two. He won three races at the A. C. A. meet in 1886 in this canoe out of four starts. His son, George, won two in the same canoe at the 1887 meet. Pecowsic was in some respects as much of a radical departure in canoe design as was Gloriana later in yacht design.

Two or three others of the earlier builders stand out above all the rest. George W. Ruggles, a member of the Rochester (N. Y.) Canoe Club, joined the A. C. A. in 1885 and continued a member until his death about 1911. He was a man of considerable means and an excellent mechanic. He early became greatly interested in the designing and building of canoes, and for quite a number of years, in the late eighties and in the nineties, to be the possessor of a new Ruggles canoe stamped the owner at once as a good sailor. He would build for no man who was not reasonably sure to do his boat and her builder credit. Building as he did at the time when unlimited sail-area was allowed, when frequently the two huge sails were of approximately equal area, his canoes possessed marked

individuality. Very narrow planking, very little shear, long straight keel with very little rocker, plumb stem and stern and very small cockpit were their outstanding features. A Ruggles canoe could be told almost at a glance. Not as light in weight as some of the earlier canoes, and with considerable trussing and bracing inside, they were very strongly built. They had to be, in order to stand the strains set up by the conflicting forces of their often huge sails on one side, and the weight of the sailor far out on his sliding seat on the other.

Another very successful builder of splendid canoes was W. F. Stevens. Mr. Stevens was a waterman from his early youth. He



DRAWINGS OF A CANOE OF ODD DESIGN FOR H. LANSING QUICK, YONKERS, NEW YORK, 1906

built for himself a small sailboat when he was sixteen years old. Later he built racing shells, and rowed them too. While engaged in this business at Lowell, Mass., about 1890 he came under the notice of Paul Butler. From then on the names of Butler and Stevens became coupled among canoeists. Stevens built all the Butler designed and owned canoes, Wasp, Fly, Bee, Bug, etc., all wonders of design and workmanship and all successful racers. In 1898 he located in Bath, Maine, where he built several of his most successful canoes. In 1906 he went to Marblehead, Mass., and became associated with W. Starling Burgess, well-known naval architect and sportsman. In 1910 he retired from business and went to live at Boothbay Harbor, Maine. In 1913, however, he

consented to build, from his own design, what was probably his most famous canoe, Mermaid, owned by Leo Friede and sailed by the latter in all his races. Damosel, another Stevens canoe, built about 1896, owned and sailed by James Newman, twice defeated Friede in important races on Charles River Basin, Boston, once in 1913 and again in 1919. Stevens also built Uncle Sam, in which H. Dudley Murphy unsuccessfully competed in England for the British Royal Canoe Club Challenge Cup in 1901, and he designed and built Yakaboo, a cruising canoe, in which Frederick A. Fenger cruised 800 miles in the Caribbean Sea from Grenada to the Virgin Islands, in 1907. Yakaboo was 17 feet long, 39 inches beam, and weighed 147 pounds. She had no rudder, being steered entirely by trimming the sheets, and by shifting the centreboard forward or aft as necessary. Her rig was a small jib and two hoisting batswing sails, that could also be reefed.

The last canoe built by Stevens was Doris III, built in 1918 for Mr. Yngve Froling of Gothenburg, Sweden. Doris III is 17 feet long and 40 inches beam, an able cruising canoe. Stevens died at his farm at Boothbay Harbor in 1922 or 1923. A splendid type of down east Yankee waterman.

Another builder of several successful sailing canoes is Fred Gilbert of Brockville, Ontario. His first canoe of note was Charles Archibald's Mab, mentioned earlier.

The cost of decked sailing canoes, capable of giving a good account of themselves as racers has always been high, partly on account of the very fine light construction required, and partly owing to the fact that they were almost always what might be termed custom built. This was particularly the case after the late war. In 1922 a syndicate was formed among the members of the A. C. A. for the purpose of building a number of canoes of one design and construction, thus greatly reducing the cost. Mr. Leo Friede very kindly loaned the plans of his canoe Mermaid. The Gilbert Boat Company of Brockville, Ontario, Fred Gilbert's company, was given the contract. About twelve of these canoes have been built, and several of them have been active competitors in the sailing races during the last three years.

An interesting variation from the regular decked sailing canoe

races is afforded by the Lipton Cup Races of the Western Division A. C. A. A splendid silver vase or cup, standing with its mahogany base, about 30 inches high, was donated as a perpetual challenge cup, by Sir Thomas Lipton, in 1923. It is offered for open canoes, up to 20 feet long but with the same regulations as to sail-area as the regular decked sailing canoes. Sliding seats, rudders and centreboards also are allowed. The first series of three races sailed in 1923 was won by Louis Stoerk. It is probably too early to determine their effect on canoe sailing in general, but as they stand, the Lipton Cup races seem to be a very sporty proposition.

The dimensions, 16 feet overall length and 30 inches beam, have been referred to as "standard." Probably three-fourths of the decked sailing canoes built during the last thirty-five years have conformed very closely to this combination of sizes. It is not of course arbitrary. The Sailing Racing Regulations of the American Canoe Association base both dimensions and sail limit on these sizes, but allow variations. The maximum length allowed is 18 feet, and the minimum beam is 30 inches. Beam must not be less than $^{5}/_{32}$ of overall length nor more than $^{1}/_{5}$. Provision is also made for minimum depth amidship, for minimum beam at waterline, and for minimum weight.

As has been stated before, sail-area is limited to 90 square feet for a canoe 16 feet by 30 inches. For each inch the beam is increased, the sail-area may be increased 3 square feet. For each inch the length is increased, the sail-area must be decreased ¼ of a square foot.

There are good reasons for this "standard" size. A 16 foot by 30 inch canoe is about the largest that, when crated, can be shipped by rail without disproportionately large cost and inconvenience. It is nearly the largest that can be easily hauled out on a float or slip by one man, or can, when stripped of sliding seat, centreboard, etc., be carried by two men. It is nearly the smallest that can be easily and effectively sailed in fairly rough water and fairly stiff winds.

Quite a number of larger canoes have been built at one time or another, some of them very good ones, and quite fast, but they have been sailed usually by men of middle age, who probably did

not care for the considerable degree of muscular activity required by the sailing of the smaller sized boats, when driven to do their best.

A decked sailing canoe is more difficult to sail well than any other type of small sailing craft. The sailor must not only have the same knowledge of the fine points of sailing required for any other boat, but in a decked sailing canoe he must do everything himself—handle sheets and tiller, and in addition be shifty in using his weight on the cross sliding deck seat, to balance a small, light, sensitive hull. The modern decked sailing canoe is, however, much easier to sail well than the old type without sliding deck seat, thwartship tiller and self-draining cockpit, because the balancing is done with much less exertion on the sliding seat than without it. Also the sailor is not bothered by the possibility of swamping if a sea is snipped. The self-draining cockpit prevents that. It is sport full of thrills for an active man who is also a good sailor.

Editor's Note.—Mr. Wilt traces his first interest in canoes and canoeing to a book that he received as a Christmas gift when he was less than twelve years of age. The book, *Hudson Bay Everyday Life in the Wilds of North America*, by Robert Michael Ballantyne, was published in 1879, and is the account of the author's life as an apprentice-clerk in the employ of the Hudson Bay Company for about six years beginning in 1841. About one-half the book is the story of canoe voyages on the business of the Hudson Bay Company. That Christmas gift still has a place in Mr. Wilt's library and fills a niche in his memory.

His first canoe was a homemade (and homely) craft, built when he was about seventeen years old, and his first A. C. A. meet was at Stave Island in the Thousand Islands in 1889, when a guest there for about two days.

He joined the the Red Dragon Canoe Club of Philadelphia, Pa., of which he is still a member, in 1892, and the American Canoe Association the same year. He became life member No. 64 of the A. C. A. in January, 1906, and was vice-commodore of the Atlantic Division of the A. C. A. in 1902, and several times a member of the Executive Committee. For several years past Mr. Wilt has

been a member of the Sailing Committee of the A. C. A. Racing Board, and also of the Board of Governors.

During his college days he was an active oarsman, and when he turned to canoe racing, it was the paddling game that interested him; as a consequence he was an active racing paddler for over fifteen years. Cruising in a canoe with sail and paddle has been Mr. Wilt's pastime and his cruising log has averaged during twenty years between 300 and 400 miles each year except in 1917 and 1918, the years of the war.

Warington Baden-Powell in 1897 thus described the joys of canoeing:

"The real commanding charm of Canoeing over all other aquatic sports is that where there is water there is the canoe's sphere of action. It matters not whether the water be sea or a mere brook, a lake or a fish pond, canoeing can be more or less enjoyed, especially if the right type of canoe for the nature of the water is chosen. The canoe, in one form or other, may be an adjunct to yachting, to fishing and to shooting; she may be useful for travel, for exploration or even for war; but, above all, the sailing canoe on moderately open water is the finest of healthgivers, and is so at the least cost. The canoeist can at his own will sail alone or elect to sail in company; not so the yachtsman, who must have a crew, if not guests also. The canoeist can carry his hotel with him; not so the shooting or fishing sportsman, the hunting man, the cyclist or the golfer. All these are dependent on house or hotel when the sport is over, whereas living in a canoe is part of the sport of canoeing."

Knowing full well that sailors not experienced with sailing canoes would be curious to know something about their speed, I looked up data on the subject.

Record times cover races sailed at the American Canoe Association Meetings at Sugar Island in the Thousand Islands, St. Lawrence River, in the years 1922–25, inclusive, and at Turtle Island, Lake George, N. Y., in 1926. They may be taken as fairly representative of the capabilities of modern sailing canoes.

DECKED SAILING CANOES

Distance 6 miles. Course 4 times around triangle of half mile sides or 6 times around a windward and leeward course of half mile between mark buoys.

Average time of 30 races omitting seconds	1 hour 38 min.
Fastest time	59 min.
Slowest time	2 hours 25 min.

7 of these races were sailed in 1 hr. 3 minutes or better

Distance 7½ miles. Course 5 times around triangle of half mile sides.

Average time of 8 races	2 hours 25 minutes
Fastest time	1 hour 35 minutes
Slowest time	2 hours 58 minutes

OPEN PADDLING CANOES RIGGED FOR SAILING

Distance 3 miles. Course twice around triangle of half mile sides, or 3 times around a windward and leeward course of half mile between mark buoys.

Average time of 20 races	1 hour 2 minutes
Fastest time	40 minutes
Slowest time	2 hours 5 minutes

Nine of these races were sailed in less than 1 hour

OPEN PADDLING CANOES RIGGED FOR SAILING

Distance 4½ miles. Course 3 times around triangle of half mile sides.

Average of 5 races	1 hour 20 minutes
Fastest time	1 hour 5 minutes
Slowest time	1 hour 38 minutes

An interesting study is that of the comparative times of the open canoes under sail and under paddle. The Record Combined race is held every year, open to both decked sailing canoes, and to open canoes rigged for sailing (called, for brevity, cruising canoes). Very few decked sailing canoes enter. The course is three miles, twice around the triangle of half mile sides. The canoes start under paddle, masts up and sails furled, and leeboards hoisted. The contestants are lined up as for a paddling race. Immediately upon passing the first mark sails are hoisted, leeboards lowered, and

the second leg is sailed, to and around the second mark. The third leg is paddled and so on alternately, the finish being under sail.

Average time for 6 races	1 hour 6 minutes
Fastest time	58 minutes
Slowest time	1 hour 13 minutes

The Record Combined is the oldest race in the history of the American Canoe Association, having been held first in 1884, and every year since, except in 1917 and 1918, when no regularly scheduled races of any kind were held.

The contest for the A. C. A. Record is one of the hardest tests of man and canoe. It consists of three races, the Record Combined, as outlined above; the Record Sailing, 3 miles on the triangle course; and the Record Paddling, ½ mile. Each contestant must use the same canoe in all three races.

The record of one man, H. Dudley Murphy, of Lexington, Mass., is unique in this series of Record races. In 1891, with thirteen starters, Murphy was sixth in the Combined race, second in the Paddling race, and second in the Sailing, thus gathering the greatest number of points, and winning the Record. In 1914, twenty-three years later, Murphy again won the Record. Six men started. Murphy was first in the Combined, first in the Sailing, and fourth in the Paddling. Murphy won the A. C. A. Sailing Trophy in 1902, 1909, and 1910. Within recent years the contest for the Sailing Trophy has consisted of three races, two on the triangle, and one windward and leeward. Murphy won one of these races in the contest of 1923, and has sailed in several since that time.

Up to and including 1926 I have been able to find no record of any one man winning all three races in any one Record contest.

EDITOR'S NOTE.—The Editor feels that the brief history of American canoes (taken from a bulletin of the Smithsonian Institution) presented in the two pages following, will be of interest.

CANOES

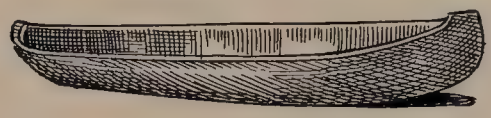
SMITHSONIAN INSTITUTION
BUREAU OF AMERICAN ETHNOLOGY
BULLETIN 30

HANDBOOK OF AMERICAN INDIANS
NORTH OF MEXICO

BOATS

Under this general term are included various kinds of water craft used throughout North America wherever waters favored. The Eskimo have two forms—the man's boat (Kaiak, Russian baidarka) and the woman's boat (Umiak, Russian

ESKIMO KAIAK (MAN'S BOAT)



CHIPPEWA DUGOUT

ESKIMO UMIAK (WOMAN'S BOAT)

TLINGIT DUGOUT WITH PAINTED DESIGNS

HUDSON BAY BIRCH-BARK CANOE

BALSA OF TULE GRASS, PYRAMID LAKE, NEVADA

baidarra)—made by stretching a covering of seal hide over a framework of whale ribs or of driftwood. The umiak, or woman's boat, is an open scow with little modification of bow and stern, propelled with large oars and a sail made of intestines; but the man's boat is one of the most effective devices for water travel in the world. The man sits in a small hatch, and, in the lighter forms, when his water-tight jacket is lashed to the gunwale he is practically shut in, so that though the water may pass entirely over him, scarcely a drop enters the craft. He moves himself through the water by means of a paddle, in most cases a double one.

Immediately in touch with the skin-boat countries all around the Arctic, from Labrador to Kodiak in Alaska and southward to the line of the white birch, eastward of the Rocky Mts., and including the country of the great lakes, existed the

birch-bark canoe. With framework of light spruce wood, the covering or sheathing of bits of tough bark sewed together and made water-tight by means of melted pitch, these boats are interesting subjects of study, as the exigencies of travel and portage, the quality of the material, and traditional ideas produce different forms in different areas. Near the mouth of the Yukon, where the water is sometimes turbulent, the canoe is pointed at both ends and partly decked over. On the E. side of Canada the bow and the stern of the canoe are greatly rounded up. A curious form has been reported by travelers among the Beothuk of Newfoundland. On the Kootenai, and all over the plateaus of British Columbia and N. Washington, the Asiatic form, monitor-shaped pointed at either end under the water, is made from pine bark instead of birch bark.

From the N. boundary of the United States, at least from the streams emptying into the St. Lawrence southward along the Atlantic slope, dugout canoes, or pirogues, were the instruments of navigation. On the Missouri river and elsewhere a small tub-shaped craft of willow frame covered with rawhide, with no division of bow or stern, locally known as the bullboat, was used by Sioux, Mandan, Arikara, and Hidatsa women for carrying their goods down or across the rivers. It was so light that when one was emptied a woman could take it on her back and make her way across the land. On the W. coast, from Mt. St. Elias southward to Eel river, Calif., excellent dugout canoes were made from giant cedar and other light woods, some of them nearly 100 ft. long. The multitude of islands off the N. coast rendered it possible for the natives to pass from one to the other, and thus they were induced to invent seagoing canoes of fine quality. Here also from tribe to tribe the forms differ somewhat as to the shape of the bow and stern and the ornamentation. On the California coast and navigable streams north of C. Mendocino, well-made wooden dugout canoes were used; wooden canoes, made chiefly of planks lashed together and calked, were used in the Santa Barbara region; both were important elements in influencing the culture of the people of these sections. Everywhere else in California, barring the occasional use of corracles and rafts of logs, transportation by water was conducted by means of balsas, consisting of rushes tied in bundles, generally, if not always, with more or less approximation to a boat of cigar shape. In certain spots in California, as on Clear lake among the Pomo and Tulare lake among the Yokuts, these tule balsas were important factors in native life; elsewhere in the state much less so (Kroeber). On the lower Rio Colorado and in south central California the Indians made immense corracle-like baskets, called by the Spaniards coritas, which were coated with bitumen or other waterproofing and used for fording the streams, laden with both passengers and merchandise.

OCEAN RACING IN SMALL YACHTS

By Samuel Wetherill

OCEAN racing in small yachts, which has become so popular during the last decade, is quite a different type of sport from the comparatively short races run in almost every harbor, river, bay, and sound in the country. The type of yacht taking part is different, the conditions are different, and, for the most part, the skippers and crews of the competing yachts are different. For ocean racing demands a thoroughly seaworthy craft which can "keep going" for several days, regardless of weather; and the skippers and crews must keep hard at it, night and day, fair weather and foul, driving their vessels at all times, until the finish line is crossed. Hard going, hard work, little sleep, irregular meals—but splendid red-blooded sport for those who like it!

Racing small boats over long courses had its inception something over twenty years ago. The late Thomas Fleming Day, then editor of *The Rudder*, caused consternation in the ranks of yachtsmen and laymen alike when, in 1904, he proposed to hold an ocean race for small yachts from New York to Marblehead, Mass. Some thought him foolish, others downright crazy. But, despite the doleful howls and lugubrious prophecies, Skipper Day persisted. He knew that small craft, if properly designed, built and handled, were just as safe at sea as large ones. So he preached, prayed, and cajoled and cussed a bit; organized his race, and ran it to a successful conclusion, without damage or loss of a boat, or harm to an individual.

And so, from that day, ocean racing became an accepted branch of the sport of yachting, to enjoy varying prosperity up to the present time, when it may be said to have reached its zenith.

The year following the successful New York to Marblehead race, Day threw another bombshell into the yachting fraternity. Why not race small craft at Bermuda?

Even those who had become reluctant converts to the 'longshore contest were aghast at the idea. What, send small, frail craft, manned by amateurs, across 650 miles of open ocean? Across the notorious Gulf Stream, with the possibility of half the fleet being smashed by the tail end of a West Indian hurricane, and the other half sunk? It was dangerous, foolhardy, suicidal.

But once more Day parried the thrusts of the unbelievers and unknowing. He scheduled his race for the month of June, when he knew from years of carefully kept weather reports that hurricanes never appeared. He knew that while the Gulf Stream was a rough, squally strip of water, that it held few terrors for a good boat and a good crew. So he organized and ran his race, again without accident, thus putting ocean racing on a firm footing from which it has never slipped.

Other races to Bermuda followed, for both sailing craft and power boats. Coastwise races became regular events, perpetual challenge cups were offered, such as the Brooklyn Yacht Club Ocean Challenge Cup, which resulted in great improvement in cruising craft and the men who sailed them.

In the years previous to the Great War yachting waned, and with it the interest in ocean races. During the war, and for a year or so afterwards, long races were almost forgotten.

But shortly after the conclusion of hostilities a new type of yacht appeared on the horizon—the much-discussed "fisherman type," from the boards of such capable designers as William H. Hand, Jr., of New Bedford, and John G. Alden, of Boston. These craft, modelled after the renowned Gloucester fishing vessels, quickly became popular, adherents of the type claiming them to be far superior to the usual type of cruising yacht in seaworthiness, roominess, handling, and all-round desirability. But how about speed? Weren't they heavy, "logy," and slow?

The answer to these questions was found by keen observers who analyzed the results of the race for the famous Brooklyn Challenge Cup, held in 1922 by the New Rochelle Yacht Club. John Alden challenged for the cup with Malabar II, a 41-foot overall schooner of the semi-fisherman type, which rated very low under the Universal Rule of measurement. Besides Malabar, there was an

Photo by Rosenfeld

THE JOLIE BRISE, ENGLISH ENTRY IN 1926 BERMUDA RACE

A remarkable boat with a fine history. During the season, 1926, she was sailed from England to New York, New London to Bermuda, Bermuda to England, and then the Fastnet Race. The boat and crew constitute real cruisers and racers.

out-and-out fisherman type yacht, Surprise, 44 feet overall, designed by McManus; and in addition were Butterfly and Azor, two fast Herreshoff sloops; Kathleen, a Gielow-designed sloop; and the schooner Hookah and the sloop Dolphin, both shoal-bodied craft. Neither Malabar nor Surprise won, but Surprise finished an actual third to Butterfly, the winner, and Azor, the second boat; while Malabar annexed third place on corrected time. Both schooners were within striking distance of the winner. To the close observer, it was evident that yachts developed along fisherman lines would have to be reckoned with in the future.

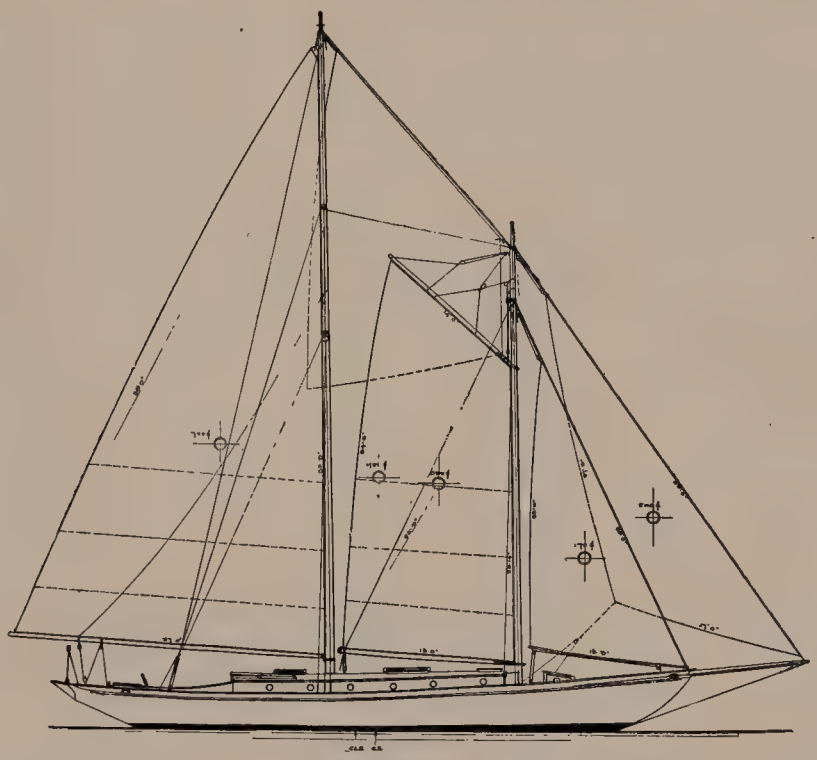
The growing popularity of the new type of schooner, and the good showing of two of the type in the 1922 Brooklyn Challenge race, has been a strong factor in the remarkable development in ocean racing since that date. Sensing this stimulant, Herbert L. Stone, editor of *Yachting*, believed the time was ripe for the resumption of the Bermuda Race. So, with the help of Alden, Hand, R. N. Bavier, the late W. W. Nutting, and other deep-water cruising enthusiasts, he organized the 1923 Bermuda Race. The objects of the race, and the part which the semi-fisherman type schooners played in its revival, are well illustrated in the opening paragraphs of the race circular, which read as follows:

"In order to encourage the designing, building, and sailing of small, seaworthy yachts, to make popular cruising upon deep water, and to develop in the amateur sailor a love of true seamanship and to give opportunity to become proficient in the art of navigation, an ocean race has been planned for this year from New London, Conn., to Bermuda.

"In drawing the conditions of this race the Committee in charge has borne in mind that the race is primarily to furnish a test of boats of the new cruising type that the designers have evolved the last few years."

The Committee had its reward in the shape of twenty-two actual starters and finishers, well divided between boats of the semi-fisherman type and craft of different design. The boosters of the semi-fisherman type were jubilant, the winner of the race being the little semi-fisherman schooner, Malabar IV, with half a dozen others of the type well up. The little 37-foot overall Bermudian yawl

Dainty made a remarkably fine showing, being only 37 minutes behind Malabar on corrected time. The Marconi rig had its first real tryout in this event, the yawl Memory, a converted sloop of the New York Yacht Club 40-footer class, being the first boat to finish, though beaten by four other craft on corrected time. Some hard going was encountered in the Gulf Stream, but outside of a



CENTREBOARD SCHOONER, WINDJAMMER
Designed by Charles D. Mower

broken boom and a couple of chafed halliards, the entire fleet came through in fine shape.

Many lessons were learned in this race. Owners of bulky, beamy, ultra-heavy, under-rigged craft found that they could not compete with a well-designed boat of reasonable dimensions and rig. Several owners of poorly designed, poorly rigged, and otherwise unfit craft learned a valuable lesson regarding the proper type of vessel and rig with which to go to sea. And quite a few owners discovered that crews which were efficient on short, triangular races in shel-

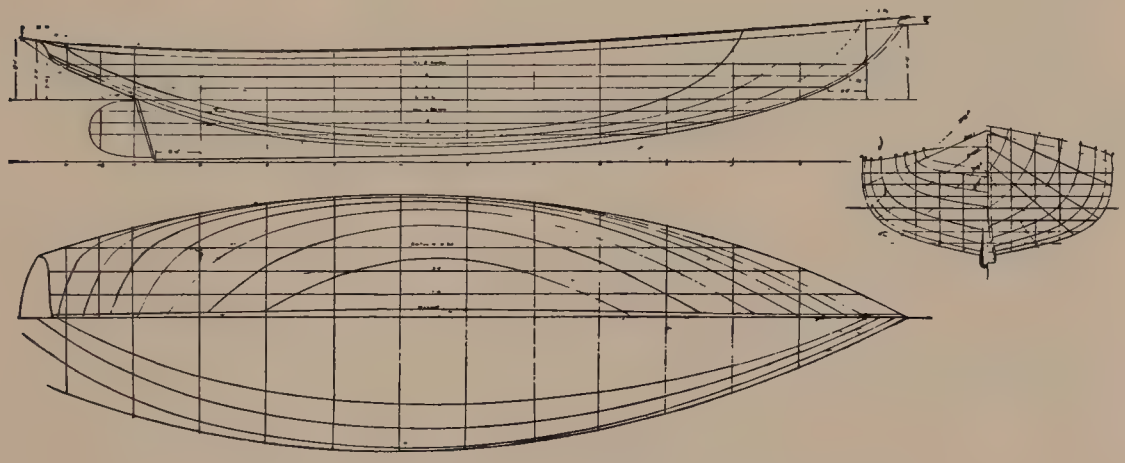
tered waters, or on ordinary short cruises, were a total loss on an ocean race; being next to worthless through being seasick, or lacking the proper spirit, or gameness, to keep a boat driving, night and day, five or more days. Again, it was discovered by many that sails, rigging, and equipment suitable for ordinary, leisurely cruising might be quite inadequate for continuous hard going on blue water. Altogether, we were learning the lessons which the Committee hoped for when they outlined the conditions for the race, and which were to be of material benefit in future races.

In 1924 another race to Bermuda was held, and while the starters dropped to fourteen, it was quite successful, and one of the fastest on record for boats of the same size, despite light to moderate weather encountered over the entire course. This was won by, on both actual and corrected time, R. N. Bavier's Memory, who secured ample revenge for her defeat the year previous. Her elapsed time for the 660-mile run was 102 hours, 31 minutes, as against 112 hours, 18 minutes for the 1923 race. The schooners Hathor and Fame, both rather long-ended, low-sided craft, were next. Black Duck, a husky centreboard schooner, was fourth; with Flying Cloud, a "fisherman type" schooner, in fifth position.

It was quite evident that a race to Bermuda every year was "killing the goose which laid the golden eggs." The time required for the round trip was too much for owners and crews to spend each year. The preparation and fitting out of a boat was a strain on the owner's time and pocketbook, to say nothing of the expenses of the trip itself. So in 1925, instead of going to Bermuda, a race was organized by the Cruising Club of America from Larchmont to Gloucester. This was not exactly an ocean race, but a shorter, 'longshore event of 256 miles, requiring expert coastwise navigation, the course taking the boats through Long Island Sound, Vineyard and Nantucket Sounds, across Nantucket Shoals, and around Cape Cod for a final 45-mile dash to the finish at Gloucester.

The Larchmont-Gloucester race established a record for the number of starters in a long distance race, twenty-six yachts of all types crossing the starting line on July 26th. The large entry list was due in part to the fact that yachts which were eligible also raced for the historic Brooklyn Challenge Trophy. The conditions

met with during this race, while not at all severe as to wind and seas, were enough to try the skill, patience, and endurance of the most expert yachtsmen. A thick fog the first night in Long Island Sound baffled the fleet, two or more boats going aground and abandoning the race. The second night, with a brisk beam wind and fair tide, the leaders raced through Vineyard and Nantucket Sounds across the dangerous Nantucket Shoals, two craft coming to grief on the Middle Ground in Vineyard Sound. The third day a light, baffling head wind along the Cape Cod shore produced a lot of "beach combing," several of the boats seeming to put their



LINES—CENTREBOARD SCHOONER, WINDJAMMER
Designed by Charles D. Mower

bowsprits into the breakers on the inshore tack before coming about, in order to benefit by the favoring slants close to shore. The husky schooner Sachem was the first craft to finish, but was beaten by Mystic, a semi-fisherman type, on corrected time. Bonita, a combination keel and centreboard sloop, won the Brooklyn Cup, three of her most dangerous competitors, Azor, Aquanno, and Tern, having abandoned the race.

The Bermuda race was resumed in 1926, starting from New London on June 21st with a splendid fleet of sixteen boats. That the lessons of previous races had been well learned was evidenced by the make-up of the fleet. There were no "arks" or "lightships," as some of the entries on the 1923 race had been dubbed, and no

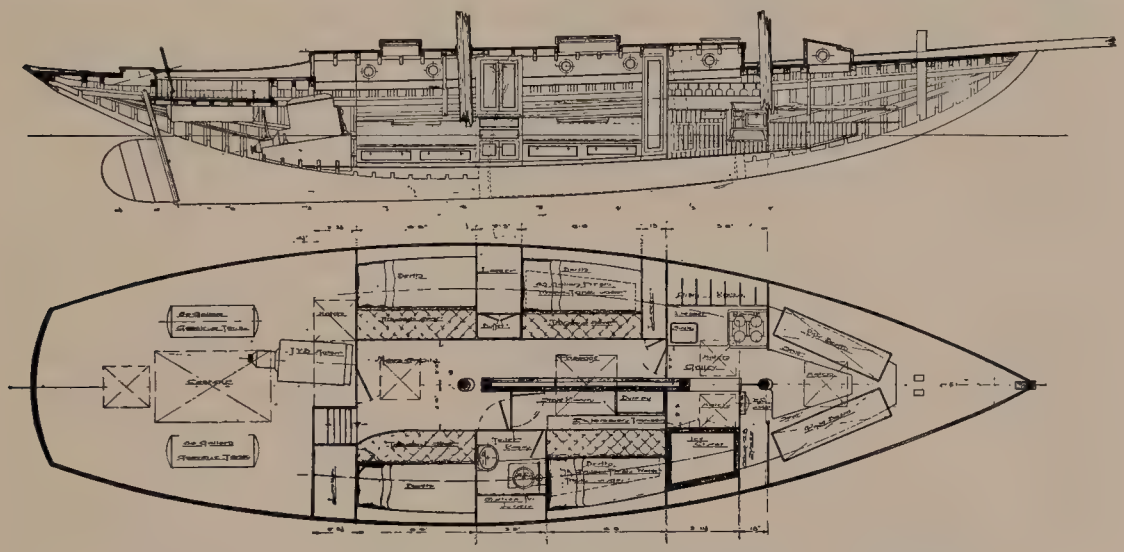
boat but what was of a good, wholesome model, with well-designed rig of reasonable proportions. The weather conditions were decidedly unusual, the wind being light to moderate most of the way, and with the exception of some five or six hours, all of the boats were hard on the wind, and seldom able to lay their course. The big jib-headed ketch Dragoon, built by R. N. Bavier with a view to ocean racing, led the fleet across the line off St. David's Head, followed by the staysail rigged schooner Cygnet. Both these craft, however, had to bow to John Alden's latest creation, Malabar VII, which defeated Dragoon by two hours on corrected time. Trade Wind, a splendid gaff-rigged schooner, came in fourth, with Jolie Brise, the British cutter, in fifth position. In the small class, Black Goose, ex-Mystic, the winner of the Larchmont-Gloucester race the year previous, emerged a winner by a narrow margin over the schooner Sagamore.

A feature of this race was the entry of Jolie Brise, a British cutter of the Havre pilot boat type, owned by E. G. Martin, who won the 1925 Fastnet Race. Commander Martin, after sailing some 5,700 miles from England to try conclusions with the Yankee fleet, made a fine showing in the early stages of the race, but after being right up with the leaders for two days, was unable to hold his own in the light head winds and lumpy seas met later on, conditions which were unkind to his full-bowed craft. Jolie Brise was a type quite unknown in America, but her fine qualities as an ocean-going yacht were quickly realized, and her flashes of speed showed her easily capable of giving the best American craft a stiff argument under conditions more favorable to her.

As 1927 was an "off year" for the Bermuda race, two shorter races, the second starting soon after the finish of the first one, were scheduled. The first was from New London to Cape May, a distance of 220 miles, organized by the Corinthian Yacht Club of Philadelphia. The second was from Cape May to Gibson Island, in Chesapeake Bay, sponsored by the Gibson Island Club, and was held over a 270-mile course which was about half in the Atlantic Ocean and half in Chesapeake Bay. The measurement and time allowance were the same as in the Bermuda races, with the exception that in the Gibson Island race a "beam correction" was

incorporated—a boat of more than average beam had her rating reduced somewhat; while narrow craft had their rating increased slightly. Time allowances were figured on the same basis as in the 1926 Bermuda race.

The record of twenty-six starters, made in the Larchmont-Gloucester race of 1925, was equalled in the Cape May race, most of the contestants being schooners, with a sprinkling of sloops and yawls. The boats encountered light head winds for some time after the start on June 25th, but at nightfall a brisk sou'wester allowed them to barely lay their course from Montauk Point.



ARRANGEMENT PLAN—CENTREBOARD SCHOONER, WINDJAMMER
Designed by Charles D. Mower

Squalls, calms, and fog made things interesting next day. Finally, late in the afternoon, when the yachts were about opposite Barnegat, a fresh nor'wester put lee rails under, and the whole fleet thundered to the finish line early the next morning. The fast sloop Butterfly was first to finish, followed closely by the schooners Windjammer and Teal. Some two hours later the little jib-headed sloop Duckling nosed across the line, a winner in her class, and a winner of the whole fleet combined, as one class. Honors in Class A went to Teal, a duplicate of Malabar VII, but with jib-headed mainsail. The centreboard schooner Windjammer, also with jib-headed mainsail, designed by C. D. Mower, won the

Brooklyn Challenge Cup, mainly through having won the first leg, in Long Island Sound, a few days previous.

The Gibson Island race of 270 miles attracted a fleet of seventeen starters on June 29th, and was remarkable in that the winner, Alden's new Malabar VIII, completed the course at the remarkable rate of 7.93 knots, believed to be a record for boats of a similar size over a course of the same length. The yachts could lay their course during the entire race, and except for two or three hours after the start, the wind was fresh enough to drive the boats close to their limit of speed. Malabar was hard pressed by the schooners Windjammer and Blue Water; while Alert, a former Class Q boat with jib-headed yawl rig, took the honors in the smaller class. Time allowance did not figure in the final results, so that the "beam correction," though theoretically a move in the right direction, was neither proven right nor wrong.

While ocean racing in America had been popular for over twenty years, interest abroad was not aroused until 1925. Mr. Weston Martyr, a Britisher of wide experience in deep-water sailing, was a member of the crew of the schooner Northern Light in the 1924 Bermuda race. Filled with enthusiasm for this ocean sport, Martyr returned to England and forthwith began a campaign for an English ocean race. He succeeded in forming a committee of well-known yachtsmen, and despite considerable opposition from the daily press and at least one sporting magazine, a race of 600 miles was organized and run, the course being from Cowes, to and around Fastnet Light, and return to Plymouth. There were but seven starters in this initial event, the winner turning up in Jolie Brise, a former French pilot cutter 57 feet overall, owned by E. G. Martin, an enthusiastic cruising man with considerable racing experience. Fulmar, a little 38-foot cutter, annexed second place. Three more cutters, one with jib-headed mainsail, and two ketches, one a Norwegian type double-ender, completed the fleet, yawls and schooners being notable absentees.

All hands competing in this race were decidedly enthusiastic at this taste of competition in cruising boats over a long course, and forthwith formed the Ocean Racing Club, with the object of fostering and promoting ocean races in the future. Only those who

had taken part in an event of 600 miles or over were qualified to become members.

The proper measurement rule for contestants has always been the cause of much discussion and argument. Various formulas have been invented and tried out. Some gave satisfaction, and some didn't. When the Bermuda race was reorganized in 1923, the Committee was faced by the problem of classifying and measuring a large fleet of craft of varying size and type, few of which had raced before, and were therefore unknown quantities. The idea was, of course, to favor the draft of moderate proportions and rig, and handicap boats of an extreme type. After thorough investigation of many formulas it was decided to use but a single dimension for measurement—overall length. Using this figure, an allowance of one hour per foot was given the smaller craft over the larger ones, this arbitrary figure having been arrived at by study of the finish times of numerous long distance races held in former years. While crude, this scheme worked out reasonably well. Long overhangs were taxed—a desired result, for extremes in length were usually accompanied by narrowness and lack of freeboard, all considered poor features for seagoing craft. Sail-area was not considered at all, the Committee believing that an extreme rig would tax itself by being difficult to handle in hard going, and further believing that a tax on sail might discourage the invention of "trick" light sails for making headway in light going when the working canvas was of little or no use.

The same rule of measurement—overall length—was continued in 1924 and 1926, but the time allowance was cut in half in 1924, as the result of the 1923 race seemed to prove that the small craft received too much allowance. At the conclusion of the 1924 race the results of this and the 1923 affair were studied carefully, and for 1926 the time allowance was changed to 45 minutes per foot—just halfway between the allowances of the two previous races. The corrected times of the 1926 race seemed to justify this change, as the finishes in both classes were remarkably close.

The Universal Rule of measurement, with full allowance for displacement, was used in the Larchmont-Gloucester race, the time allowance being figured by the tables in use by the Yacht

Racing Association of Long Island Sound. The same rule and allowance have been used in recent races for the Brooklyn Challenge Cup.

In preparation for the 1928 Bermuda Race, the Committee believed that the crude "overall length" measurement could and should be improved upon, the idea being that craft of the semi-racing type, with long ends, shallow hulls, scant freeboard, light displacement and big rigs, should be penalized when racing against boats of a healthier type for offshore going. So, borrowing some features from the rule in use in the British Fastnet Race, a measurement rule has been devised which is intended to encourage the building of boats with moderate overhangs, good beam, and depth of hull, and moderate spreads of sail, no account being taken of the number or kind of light sails. With the rating evolved by this rule, time allowance will be figured as in the 1926 race, as this figure seemed to be the most reasonable, judged by past performances. When applied to five well-known boats of different type, the rule produced ratings which gave satisfying evidence that the change would be a move in the right direction.

The average yachtsman, who restricts his sailing to afternoon pleasure jaunts, short races in protected waters, or casual cruising, principally in daytime, may well wonder just what ocean racing is all about—what good it does, and what it proves. I shall endeavor, in closing, to show a few of the ways in which yachting, and yachtsmen, benefit by ocean racing.

The first thing brought forcibly to our notice by ocean racing is that long ocean passages in small craft are just as safe as in large vessels, always providing that the boat is properly designed, built, equipped, and handled. The fact that a boat is small is no longer given as a reason for a craft being unfit to go to sea for protracted periods. In the ocean races of the past ten years, I do not recall a single loss of life, or serious injury to anyone. The loss of life in any community from automobile accidents alone in the space of a single year is far greater than in all the ocean races for small boats combined.

The publicity given to ocean racing is, in no small measure, responsible for the increasing interest in long cruises in small craft.

Photo by Rosenfeld

DRAGOON

Designed by Sweisguth. First over the line at finish in Bermuda Ocean Race of 1926, but only second place on corrected time

Whereas, in the not distant past, long trips in small boats were few and far between, it is nothing unusual these days to hear of two or three ocean passages in a single season; while cruising in the West Indies and the South Seas, and even to Labrador and Greenland, is gaining considerable popularity.

The development of hulls and rigs for blue-water work has been notable. The average cruising man was often surprised to find that the boat he considered his "ideal cruiser" was quite unfit to stand the continued hammering of Old Man Ocean and Boreas. The low, long-ended craft proved to be "submarines" or "Hell divers." Other boats, built to the other extreme—excessively heavy and "chunky"—were so slow that they never got anywhere, regardless of how comfortable they might be. The under-canvassed boat proved slow, while the over-canvassed craft proved tender, and killed off her crew by requiring too frequent sail-changing. Ordinarily sound hulls opened up when driven hard, and rigging and sails gave way when bad weather set in. And so it went. Each succeeding race taught its lessons, and each succeeding race pointed the way towards better boats and better rigs for seagoing purposes.

The lessons learned, as regard hulls, are well demonstrated by the leading boats in the two races of 1927—the Cape May race and the Gibson Island race. The former was won by Duckling, a well-designed little sloop from the board of C. D. Mower, only 36 feet long overall, with a moderate "knockout" Marconi rig. Her accommodations are excellent, her rig easily handled, and she acts beautifully in hard going. Teal, a 53-foot Alden schooner, and Windjammer, other winners in this race, are able, rugged craft with fine accommodations. Malabar VIII, the Gibson Island race winner, is a development of Teal and Malabar VII, her closest competitors, Blue Water and Windjammer, being fine, husky schooners capable of any kind of ocean trip. While Alert, the winner in Class B, may be said to have "upset the dope" in this race, it may not be amiss to add that a member of her crew stated after the race that she was a "submarine"—and her owner is building a huskier craft with a view to future ocean contests.

The Marconi, or jib-headed rig, which has been adopted on practically all racing craft in the past five or six years, was looked

on askance by the cruising fraternity on account of the apparent excessive height of masts necessary to secure sufficient sail-area, and the probability of trouble developing with the track and slides, to say nothing of the trouble encountered while hoisting and lowering sail under way, due to lazyjacks and boom lifts. Yet it has been adopted successfully by some, and is growing in favor. R. N. Bavier used it on Memory on both the 1923 and 1924 Bermuda races, and in 1926 installed one in Dragoon, which he states was thoroughly satisfactory in every way. Teal, Windjammer, Alert, Duckling, and a number of other yachts have also used it, without mishap or trouble. The writer was on board Teal in the Cape May race, and found that the mast, beautifully stayed, stood the strain perfectly, even in a hard squall which laid Teal over until her cabin top was awash, with everything set. Neither track nor slides gave any trouble or developed any weakness. Some slight difficulty with lazyjacks and lifts was accounted for by the improper rigging of these necessary appliances. While the jib-header is undeniably making progress, the majority still stick to gaffs, among them being John G. Alden, who may be said to be the leading designer in this country of small seagoing yachts.

Not the least important result of ocean racing has been the development of seagoing amateur crews and navigators. Before the late war, celestial navigation was almost an unknown art among yachtsmen. During the war, however, many yachtsmen learned the art of locating a vessel with the aid of the sun and stars, with the result that many fine amateur navigators are now available for ocean races, with numerous others learning as they go along.

Quite a number of mediocre showings of boats in races held in 1922 and 1923 were due to the fact that they were manned by men unfit, either mentally or physically, or both, for the job in hand. It is one thing to race a boat around a short triangular course on a Saturday afternoon, and then jump ashore for a good dinner and a good bed—or to cruise leisurely along, dropping the hook in some sheltered harbor at night. But it is quite another thing to drive a boat in open water, for three, four, five, or more days, cooking and eating when you can, and sleeping when you must—but always

driving, keeping the boat at the limit of her speed under the conditions. This takes not only a strong physical make-up, but a strong mental make-up as well—the "will to win" regardless of the lack of food and sleep, and of the various hardships attendant upon a long, hard race. The weaklings were soon weeded out, and their places taken by those properly qualified. So today we find that there is an actual surplus of experienced, reliable crew material available before the start of each race.

EDITOR'S NOTE.—No one in America has had more experience in ocean racing than Mr. Samuel Wetherill, who is at present one of the editors of the well-known and much appreciated magazine, *Yachting*. I am adding in this note some information about trans-Pacific racing with the thought that the marvellous races of that ocean, although only casually mentioned, in reality deserve a paper and much more attention than they receive here. The San Francisco to Honolulu contest, while a real test of boats and seamanship, pales into insignificance, as do all other ocean competitions, when compared to the San Francisco-Tahiti-and-back race. As usual in so many contests held in America, the trophy was presented by Sir Thomas Lipton, the winning of which necessitated a voyage of 10,000 miles (nearly half the circumference of the world) and about four months at sea on a moderate size boat. The smallest entrant was Idalia, 34 tons; and the largest, Mariner, 97 tons. To comprehend what a race of this kind means, it is interesting to consider somewhat the experiences of the Idalia. On the night of the 28th of August, on the return voyage, the boat sailed from Honolulu minus two of the crew who had failed to appear at the time set for sailing. A few hours afterward the two remaining sailors and the cook were unable to take in the sails and the storm stripped off every bit of canvas. After being towed back to harbor the Idalia set out again, three days later, with new but badly made sails; but with the full crew. The strong winds soon worked havoc with the late purchases. With mainsail rent asunder and in the face of head winds, the boat reached the Golden Gate after battering around for thirty days. When port was eventually made, the gasoline supply was entirely exhausted as was all food

Photo by Rosenfeld

MALABAR VIII

The winner of the 1926 Bermuda Ocean Race. Designed by John G. Alden

except macaroni and canned beets, despite the fact that all hands had been on short rations for two weeks. The foregoing and the following information was obtained in a paper published in *The Rudder*, written by Jack Stradling and in which he writes in conclusion:

"Though all hands agreed that the race had been a great event and the course from San Francisco to Tahiti the safest over which a race of this length could have been held, the skippers concerned are of the opinion that, since the race cost each of them from five to ten thousand dollars and three to four months' time away from business, it will be some time before an event of this nature is held again."

The four entries and the order in which they finished are:

Mariner	97	tons	106	feet	length	23	feet	beam	14	feet	draught
Eloise	50	"	86	"	"	18	"	"	7	"	"
Idalia	34	"	74	"	"	16	"	"	10	"	"
Shawnee	43	"	76	"	"	17	"	"	9	"	"

THE STORY OF THE FASTNET RACE

By Maurice Griffiths

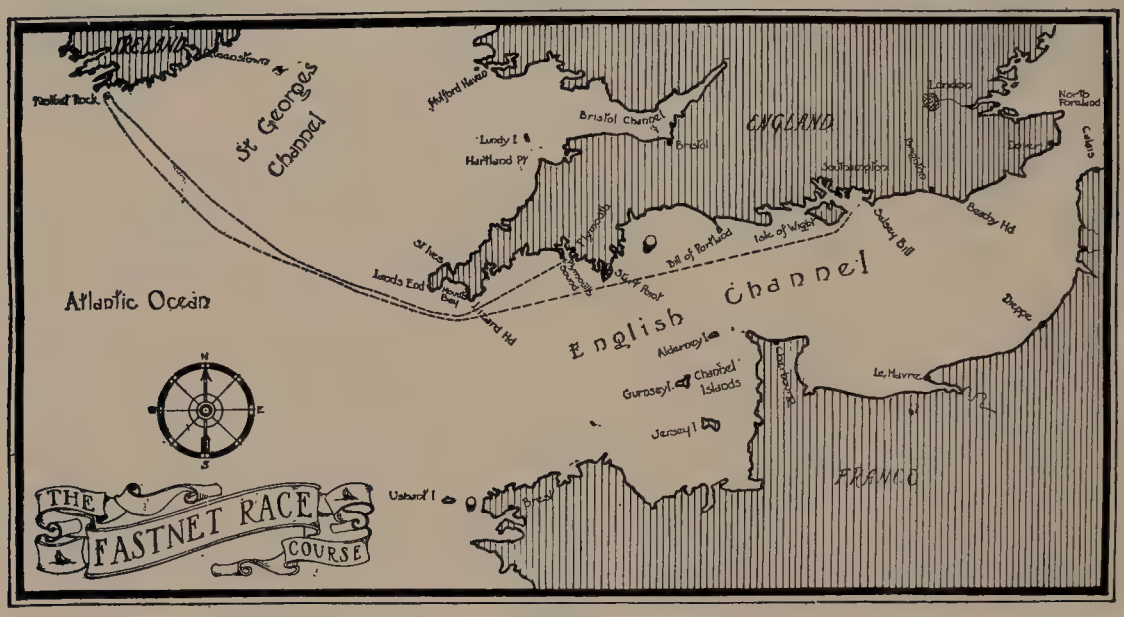
UNTIL only a few years ago ocean racing with small yachts in Great Britain was not a recognized sport. The yacht racing calendar included one or two "seagoing" races for yachts in certain clubs, such as the "70-mile midnight race" from Liverpool Bay to the Isle of Man, but the general public and not a few yachtsmen regarded long passages at sea in a small yacht as foolhardy and futile. Many small boats have made long ocean passages, but their safe arrival has not quite dispelled the belief in the average man's mind that their owners must be mad and their escape from death a miracle.

But keen cruising yachtsmen continued to take small boats long distances and the idea of holding a race between real seagoing cruising yachts of moderate size, over a course which would compel them to keep at sea for several days and nights on end and prove their sea-keeping ability to the full, was received with delight. An organizing committee was formed which included such well-known men as Major Philip Hunloke, the Senior Vice-President of the Yacht Racing Association, Captain R. T. Dixon, Mr. Algernon Maudalay, and Commander E. G. Martin, all of them members of the Council of the Y. R. A.

The course decided upon was one of 615 miles, and it was chosen with many considerations in view. It would truly be an "ocean race," for it led across a strip of the Atlantic, yet at no point of the course would the yachts be more than 100 miles from a safe port. True, it led through a notoriously bad part of the English Channel, where gales blow when everywhere else is enjoying calm breezes, but the whole idea of this ocean race was to try honest-to-goodness seagoing yachts and to exclude out and out "racing machines," and for this reason yachts of the "International Classes" were debarred from competing.

The course, then, was from Ryde, in the Isle of Wight, eastward down Spithead, round the eastern end of the island, down channel, round the Fastnet rock off Cape Clear on the southwest corner of Ireland and back to Plymouth Sound, 615 miles of open sea work with plenty of tides and foul winds to consider.

The Fastnet race course is excellent in many ways, since it calls for careful judgment in "working the tides," sound seamanship in tackling open water and big seas, and efficient navigation for picking up the Fastnet lighthouse after leaving the Scilly Isles some



MAP OF WATERS SAILED ON IN FASTNET RACE

170 miles astern. The prevailing wind in the English Channel nearly all the year round is southwest and the chances of the yachts having a heavy beat down to the Lizard against a squally, fresh, rainy wind are ten to one. At the very start, if the yachts have to butt into a nasty so'west "snorter" after rounding the eastern end of the Wight, the skippers have a problem of good seamanship and judgment at once thrust upon them. Should they make short boards inshore where the tides are said to be less? Or should they boldly make a board right across to the French coast where, with clever working, they could make the intricate tides help them? Or should they beat down mid-Channel where the seas are larger,

and keep a sharp eye out for the steamer traffic? The yacht that hugs the English coast when it is blowing from southwest is liable to get into trouble, for the "race" off St. Alban's Head, caused by the tide being swept out by the head at an angle to the main body of the water, must at all costs be avoided; whilst the race off Portland Bill, forming a patch of seething, frantic water four miles across, is the worst on this coast and has been known to disable even a steamship. Behind Portland race a current sets strongly into Chesil Beach, a deadly trap with a strong on-shore wind from the southwest which is fatal to any sailing vessels getting embayed there, and then there is yet another race off the Start that can prove dangerous to a yacht.

On the whole the Fastnet race course favors the skipper who keeps away from the land and trusts to his navigation to get him to the rock off Cape Clear.

The first Fastnet race, which was sailed in 1925, was very much in the way of an experiment. Before the event much adverse criticism appeared in the press. The Wise Old Men of the Yacht Clubs shook their heads and declared hoarsely that it was "sheer madness" to send small yachts manned by amateur crews over such a course. They pointed out that it was always notoriously bad off the Start and off Cape Clear, and they added with characteristic resignation that *they* wouldn't be surprised if several of the boats were wrecked on the Cornish coast or hammered to pieces by the great Atlantic "grey beards." In fact, they sat in their clubs and predicted catastrophies that must have quite hurt poor old Neptune's better feelings!

In spite of all this there were some very keen cruising men who not only owned boats but sailed them and who were anxious to try the popularity of this race. In order to keep it entirely a race for comparatively small yachts so that owners with moderate means could compete, it was ruled that competing yachts must be not longer than 50 feet on the waterline, nor less than 30 feet. This allowed yachts of anything from 30 to, say, 70 feet overall, or roughly 10 to 50 tons Thames measurement, to enter, and as they would differ considerably not only in size but also in type, the formation of a fair and successful rating rule for handicapping was

a very difficult matter. The Committee had to consider various rigs (cutters, yawls, ketches) sail-area, total length, displacement, overhangs, draught, probable maximum speed both "off" and "on" the wind and other factors.

At last a formula was found which appeared to be suitable, and which placed a premium on displacement and freeboard (including bulwarks), and, in short, favored the healthy, seagoing boat.

This formula was as follows:

$$\frac{L \times \sqrt{S} - F}{5} \times 0.1 \qquad \frac{L\sqrt{S}}{3\sqrt{D}} = \text{Rating}$$

In this, "L" was the length of the yacht, in feet, measured in a line parallel with the middle fore and aft vertical plane, at a distance from it equal to one-tenth of the *load waterline breadth*, and at a height of one-twentieth of the *load waterline length* above L. W. L.

"S" was the sail-area in square feet, measured as by the I. Y. R. U.

"F" was the mean freeboard to top of rail taken at forward and after "L" measurement stations and at an equi-distant intermediate station.

"D" was the displacement in cubic feet for which the designer's certificate could be accepted.

It will be seen by this rating formula (which incidentally differed only slightly from the I. Y. R. U. formula for the International 18-foot class) that excessive overhangs were penalized and the "cruiser" type of boat encouraged.

There were seven entries for the first Fastnet race in 1925. These were, in alphabetical order:

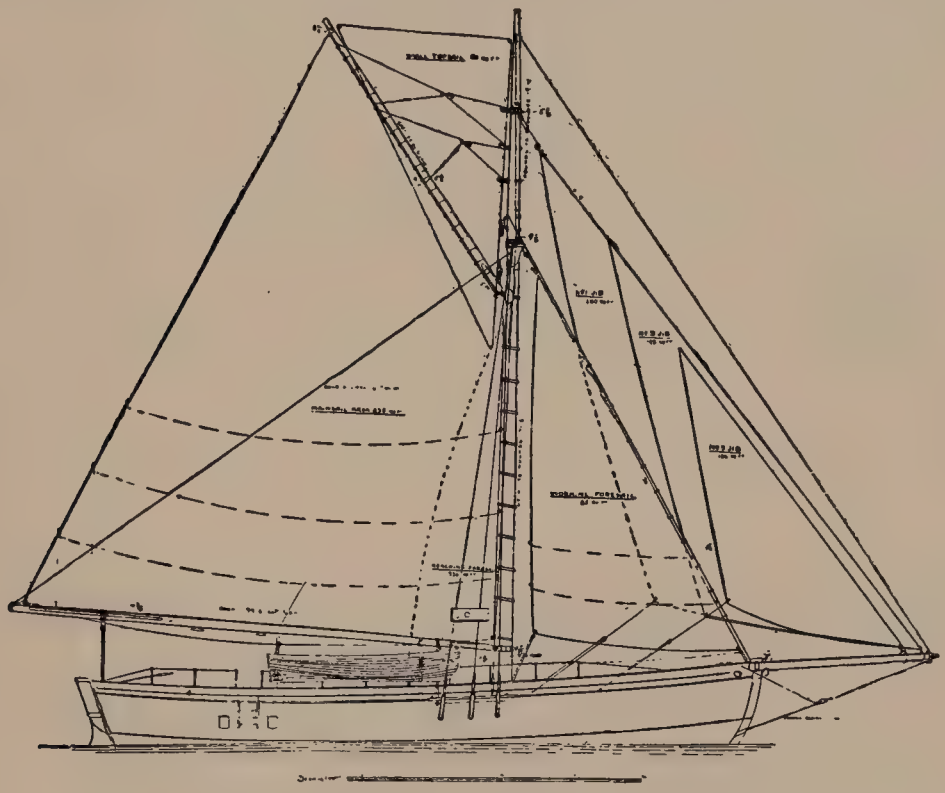
Banba IV, 20-ton auxiliary ketch, designed by Frederick Shepherd on Norwegian lines. Her dimensions were L. O. A. 38 feet, L. W. L. 34 feet, beam 12 feet, draught 7 feet, sail-area 1,330 square feet.

Fulmar, 14-ton cutter, built in 1901 at Falmouth, Cornwall. L. O. A. 38 feet, L. W. L. 33 feet, beam 9.7 feet, draught 7 feet, sail-area 1,050 square feet.

Gull, 18-ton cutter, built by Camper & Nicholsons, in 1896.

L. O. A. 44 feet, L. W. L. 37 feet, beam 10 feet, draught 7 feet, sail-area 1,597 square feet. (This was the only Irish representative in the race.)

Jessie L., 27-ton Bermuda cutter, a converted Bristol Channel pilot boat, built by Hambly in 1887. L. O. A. 42 feet, L. W. L.



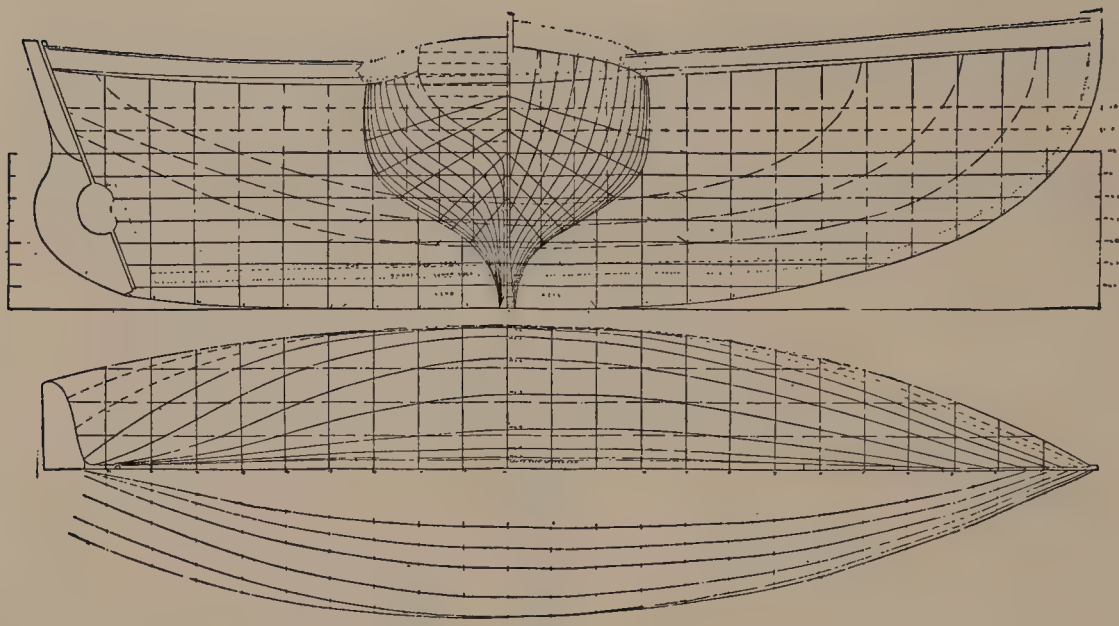
TALLY HO SAIL PLAN

Twenty-nine-ton cutter, designed by the late Albert Strange, that followed the American designed, and English built La Goleta over the finish line in the 1927 Fastnet race for second place, actual time. Tally Ho was the winner, however, as her handicap was five hours greater than that of her only surviving competitor, the thirty-ton Alden schooner.

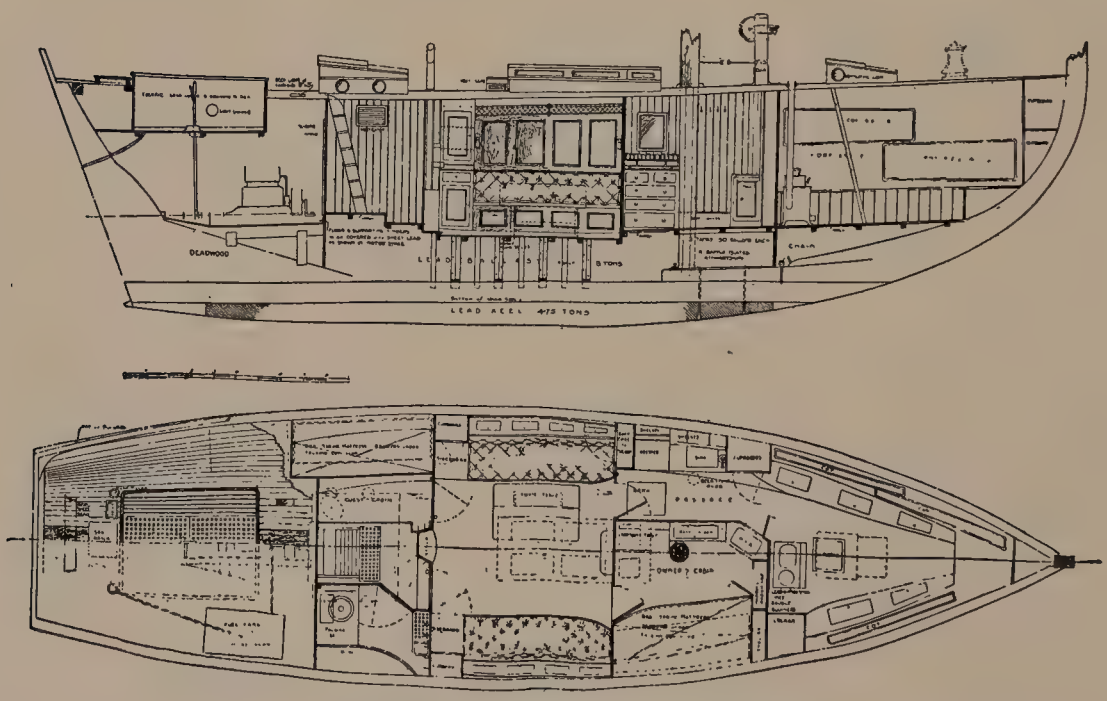
37 feet, beam 13.3 feet, draught 6 feet, 6 inches, sail-area 1,250 square feet.

Jolie Brise, 44-ton cutter, a converted Havre pilot boat, built at Le Havre in 1913. L. O. A. 56 feet, L. W. L. 48 feet, beam 16 feet, draught 9 feet, 6 inches, sail-area 2,400 square feet.

North Star, 39-ton ketch, Norwegian type, built at Tvedestrand,



TALLY HO—DIMENSIONS AND LINES
L. O. A. 47.5′. L. W. L. 44.1′. B.12.8′ Draught 7.5′



TALLY HO—INTERIOR ARRANGEMENT
The engine is a 4 H. P. Kelvin

1925. L. O. A. 49 feet, L. W. L. 46 feet, beam 14 feet, 6 inches, draught 7 feet, 6 inches.

Saladin, 34-ton cutter, another converted Bristol Channel pilot cutter. L. O. A. 49 feet, L. W. L. 43 feet, beam 14 feet, 8 inches, draught 8 feet.

All these boats are of the "healthy, cruising type." None of them could be called a "racing" yacht, and they would probably be looked upon in American waters as excessively heavy and abominably slow. It will be seen that three are converted pilot cutters, two of the Norwegian type with pointed sterns, both severely under-canvassed, whilst the remaining two, Fulmar and Gull, are both normal cruising cutters with little overhang forward. The maximum speeds of these boats would vary considerably. Jolie Brise, I believe, can log 10.5 knots with a strong beam wind; whilst the 14-ton Fulmar may count on a fraction over 8 knots as her highest possible speed before shortening canvas becomes a dire necessity; the beamy, full-bodied Banba IV also had a low maximum speed of approximately 8 knots.

The yachts were started by the Royal Victoria Yacht Club from Ryde, Isle of Wight, at noon on Saturday, August 15th. Light westerly winds prevailed and after rounding Bembridge Ledge and opening out St. Catherine's light the yachts ran into a series of calms and faint, tantalizing breezes. To avoid the strong flood tide, most of them tacked close in shore with all the light-weather canvas they could set. Jolie Brise, although with her displacement of 55 tons the heaviest boat in the race, crept ahead, for her ability to "ghost" to windward in the lightest of airs, despite her bulk, is wonderful; while Banba IV and North Star, short, stubby, and under-canvassed, lagged behind, dearly praying for a fresh beam wind.

But the weather remained in a gentle mood until the leading yacht, Jolie Brise, was almost in sight of the Fastnet. Then it breezed up from west and backed to so'west. The sky and the barometer promised real "Channel weather." The French pilot cutter rounded the Fastnet and went roaring homewards. On the way she passed Saladin and some time after Banba IV, driving along towards the rock. The wind freshened, steadied and lasted,

so that Jolie Brise romped into Plymouth Sound and crossed the finishing line at 2.45 P. M. on August 21st. She was the first yacht home—the "scratch" boat but an easy winner.

Out there to the westward three yachts almost within sight of one another were roaring home with bones in their teeth, fighting for second place. They were Saladin, the 34-ton pilot cutter; Gull, the 18-ton cutter; and Fulmar, 14 tons, the smallest boat in the race. Fifty miles off Saladin was leading, but the little boat saved her time and Fulmar was second! One by one the others came in and anchored, but it was August 23d before Jessie L and North Star arrived.

Enthusiasm ran high. With all the yachts anchored together under the very Hoe on which, nearly 350 years before, Sir Francis Drake had finished a game of bowls while the topsails of the Spanish Armada were even then over the horizon, the Ocean Racing Club was born. A cup, suitably called the Ocean Racing Club Challenge Cup, was presented by Commander E. G. Martin, the sporting owner of Jolie Brise and winner of the first Fastnet race; and the next year's race was already a foregone conclusion.

Ocean racing in small yachts had come to stay in Great Britain. The daily papers published articles (grossly inaccurate, but splendid specimens of journalistic imagination) and praised the wonderful but "tiny ocean greyhounds"; all the adverse criticism was taken back and quietly buried; the club "greybeards" fell asleep once more and everyone felt very encouraged. It had been shown that quite small yachts, provided that they were of a suitable type and suitably prepared, were perfectly capable of keeping the seas in foul weather. Seven yachts had started, seven had crossed the finishing line. Well, what more could you want?

The only thing that needed adjustment was the rating formula. The existing one had rather favored the large boat, and the fact that nearly 58 hours elapsed between the finish of the first and last boats suggested that either the one had been faster than anticipated or the other slower than she ought to have been.

For the next race in 1926 the Committee played with figures and

facts and devised a formula which was not only far simpler to work out, but has since proved fair to all types of yachts. This is it:

$$\text{Yacht's rating} = .2\,\frac{L\sqrt{S}}{\sqrt{BD}}$$

In this "L" is the length between perpendiculars *plus* one-quarter the difference between this L. B. P. and L. O. A. and *minus* the height of the bulwarks amidships, from covering board to top of rail.

"S" is the sail-area as measured by Y. R. A.

"B" the extreme beam to outside of planking.

"D" the depth from top of beams at side amidships to top of floors.

Arrangements in connection with this race in America had been placed in the capable hands of Mr. Herbert L. Stone, the editor of *Yachting*, and through his energy the owner of the Alden fisherman type schooner Primrose IV, Mr. Frederick L. Ames, was induced to sail over in order to take part. Earlier in the summer Jolie Brise had been sailed across the Atlantic to Long Island Sound, had won the "fisherman's prize" in the races to Bermuda, and had returned home from Bermuda also to sail again for the Fastnet Cup.

In other quarters the English "ocean race" had attracted the sporting spirit of cruising and racing men, and Colonel Baxendale went so far as to build a 50-ton cutter which was specially designed by Fife under the new Fastnet Racing Club racing rule, in order to compete. Hallowe'en, as she was called, was built at Fife's yard at Fairlie and she was a fine, modern type of fast Bermuda rigged cutter. Her chief dimensions were: L. O. A. 70 feet, L. W. L. 50 feet, beam 14.6 feet, draught 9 feet. She is the only yacht so far which has been built specially to take part in the Fastnet race. Many yachtsmen, when they saw her with her lofty mast and long overhangs—20 feet in all—declared that she was "more of a racer than a cruiser" and that if anything but "dirty" weather was encountered, she would sail into Plymouth and get tired of waiting for the rest to come home! But some of the owners of the little, slow but weatherly cruisers tried to look hopeful and murmured

"wait and see." The Englishman loves that advice when he's in doubt. They looked at Hallowe'en and then put their faith in the handicappers.

For this race Cowes was chosen as the better starting point. There is little shelter off Ryde, and when the yachts had been lying there the day before the previous year's race, I gather that

Photo by Beken

ALTAIR

Fourteen tons. The only yacht owned and entered by a woman in the 1926 Fastnet race

the official measurer had got a little damp and disheartened when trying to take his measurements. It is really no joke trying to measure a yacht's freeboard when she is rolling her rail under!

Nine yachts crossed the line off the Royal Yacht Squadron jetty on Saturday, August 14, 1926, amongst them four of the previous year's competitors: Jolie Brise, Banby IV, Saladin, and Gull. There were also Primrose IV, whose dimensions are: L. O. A.

50 feet, L. W. L. 40 feet, beam 13 feet, 4 inches, draught 7 feet, sail-area 1,300 square feet; and Hallowe'en. Besides these, there were the following newcomers:

Ilex, 20-ton yawl, built 1899, L. O. A. 50 feet, L. W. L. 40 feet, beam 10.4 feet, draught 7.5 feet.

Altair, 14-ton cutter, built 1909, L. O. A. 38 feet, L. W. L. 30 feet, beam 10 feet, draught 6.5 feet.

Penboch, 12-ton cutter, built at St. Servan, Brittany, 1901. L. O. A. 34 feet, L. W. L. 31 feet, beam 9.4 feet, draught 7 feet.

Ilex is a healthy type of cruising yawl with slightly rounded stem and was sailed by members of the Royal Engineers Yacht Club. Altair, owned by Mrs. T. Aitken Dick, O. B. E., F. R. G. S., was the only yacht which was to be graced by feminine beauty, while Penboch was a converted French fisherman and the smallest and shortest boat in the race.

Like the previous year's race, the start was made in light weather, and an almost flat calm prevailed throughout the first night. A faint breeze, however, disturbed the water in mid-Channel, and Ilex, whose skipper had very wisely taken his ship offshore while the others hugged the coast, was rewarded by making several miles with this little breeze—and that little bit of seamanship made all the difference. * * * All the way to the Fastnet lighthouse the weather was light and variable, but when Hallowe'en rounded the rock at 1 A. M. on August 17th the glass was dropping rapidly. Ilex was the next boat round at 8 o'clock, followed by Jolie Brise at 10.30 A. M., Gull at 2.15 P. M., Saladin four hours later, with Primrose IV within fifteen minutes of her.

That night, when Banba IV, Penboch, and Altair were still to leeward of the Fastnet, it began to blow out of the so'west. The yachts that had got round that day were flying away home for Plymouth, Hallowe'en leading, with Ilex and Primrose IV not far astern. It was a small but deep depression that brought the wind that night and as the gale veered from southwest to west, Penboch and Altair had to heave-to just to leeward of the irritating Fastnet light. If only they could have got round! Gull was having a bad time. She had sprung a severe leak, having "spewed" some caulking from a forward seam below the waterline, and her mainsail

was split from top to bottom. The pump had to be kept going all the time and there was nothing for it but to run for Cork harbor. What happened to Altair is uncertain, but she eventually put into Baltimore harbor, which is close to Cape Clear. Her owner apparently did not intimate her safe arrival for several days and a great deal of anxiety was felt in England. A destroyer was sent out by

PENBOCH

Twelve tons. A converted French fisherman, the shortest and smallest yacht in the 1926 and 1927 races. But she gave a good account of herself each time.

the naval authorities to search for the "missing" yacht, and the more sensational newspapers saw great copy after someone whispered, "*lady* aboard," "missing," "shipwreck," and so on. When Altair was discovered lying snugly in Baltimore the press interest died like a pricked toy balloon. In fact, several night editors in London felt quite hurt about it!

Penboch worried round the Fastnet and continued on to Plym-

outh, arriving within six hours of Banba IV. Hallowe'en, the "scratch" boat, had arrived first, but Ilex and Primrose IV had come in within their time allowance, Ilex winning by only thirteen minutes! Here is the result in tabular form:

Boat	*Date*	*Finishing Time*	*Handicap*	*Corrected Time*
Ilex	August 18	21 21 22	18 6 30	3 14 52
Primrose IV	" 19	7 48 30	28 20 30	3 28 0
Hallowe'en	" 18	9 5 30		9 5 30
Saladin	" 19	9 57 50	23 24 15	10 33 35
Jolie Brise	" 19	4 4 19	14 22 30	12 41 49
Banba IV	" 20	2 32 2	33 29 0	17 3 2
Penboch	" 20	8 7 39	38 16 0	17 51 39
Gull			23 24 15	
Altair			37 24 45	

It will be seen that all the seven yachts home finished within 14½ hours on corrected time. With such divergent types and sizes, with such uncertain weather and over a course of 615 miles, this speaks well for the method of handicapping. The result also says a great deal for the cruiser type of vessel, for in spite of the advantages that the first three days of light winds gave her, Hallowe'en did not sweep the board as it had been predicted. I am told that great difficulty was experienced with her Bermuda mainsail when she was compelled to reef down in the "blow" of the night of the 17th, when the clips tore away from the "tramway" on the mast and the sail refused to come down the lofty spar. Hallowe'en did not sail in the following year's race, and her Bermuda mainsail has since given place to one of the orthodox gaff and boom type.

Ocean racing in small yachts was fast gaining ground as a popular sport in Great Britain. It satisfied the cruising man and it appealed to the more hardy of the racing men. Cruising and racing yachtsmen became reconciled in connection with this event. The day of miracles was not nearly over yet.

For the British Isles, 1927 was a summer of much wind and more rain, of floods, storms, and wild weather generally. With one or two bright intervals, the weather was quite unmentionable from May

onwards, and for a fortnight before the date booked for the start of the Fastnet Cup Race there had been a hard wind with violent squalls out of the southwest accompanied by driving rain and pithy epithets from seaside holidaymakers. A few days before August 13th, when the start was to be made, a few of the competitors were lying in Cowes Roads, wind rode and rolling sickeningly. Others turned up on the 11th, telling of "hot" passages and days spent windbound. Another Alden schooner, the Nicanor, had come across the Herring Pond in twenty-two days during a spell of moderate weather in order to compete in this race, and was wanting to try a new suit of canvas which Ratsey and Lapthorn of Cowes had made for her on her arrival. She was the only American representative, but a fine looking ship she was, faster than Primrose IV, with longer overhangs. She had been built in 1926 for Mr. Alvin T. Simonds, a young Harvard undergraduate, who had sailed her across with other Harvard men aboard, and she was one of Mr. John Alden's faster type of cruising schooners. Her dimensions were: L. O. A. 58 feet, L. W. L. 42 feet, 6 inches, beam 14 feet, 6 inches, draught 7 feet, 9 inches, sail-area 1,615 square feet.

Jolie Brise had changed hands and was now owned by Dr. Brownlow Smith and Mr. Warren Ferrier. She, with Ilex, Altair, and Penboch of the previous year's racing, was again competing. There were several newcomers to this sport, and these were, in order of size:

La Goleta, schooner, 30 tons, Mr. R. Peverley.
Tally Ho, cutter, 29 tons, Lord Stalbridge.
Morwenna, schooner, 28 tons, Mr. W. Curtis Green.
Spica, cutter, 22 tons, Mrs. A. M. Hunt and Mr. J. T. Hunt.
Shira, cutter, 21 tons, Col. G. M. B. Sarel and Commander H. P. Wilson, R. N.
Saoirse, square rigged, staysail schooner, 20 tons, Mr. Conor O'Brien.
Content, cutter, 19 tons, Mr. R. D'Oyley Carte.
Thalassa, yawl, 16 tons, Mr. J. C. Donsonby.
Maitenes, cutter, 12 tons, Mr. B. Luard.
Nellie, cutter, 12 tons, Mr. Maxwell S. Solly and Mr. Hugh Cuthbert Tetley.

La Goleta was an English-built schooner to one of Mr. Alden's designs, similar to Nicanor. Tally Ho was a typical English cutter with a transom stern and a very little overhang forward. Saoirse,

aboard which the writer sailed, was the boat which Mr. Conor O'Brien had taken across three oceans and round Cape Horn. Her rig was experimental and extraordinary, being a "Staysail schooner" with square rigged foremast and gunter lug main! The Nellie was a 40-year-old boat, built on the lines of a fishing smack with little freeboard aft and not much room below. She had sailed

Photo by Beken

NICANOR

Thirty-six tons. Alden schooner which sailed across from Boston to take part in the 1927 race, but was forced to give up owing to bad weather in the English Channel.

round from the East Coast in order to try her luck in the Fastnet Race. Mrs. Aitken Dick was not the only woman in this race. Mrs. Hunt sailed aboard Spica and Miss O'Brien and Miss "Peter Gerard" aboard Saoirse.

So bad had the weather been that on Friday, the night before the start, the committee agreed that if there was no sign of improvement in the morning, a signal would be sent up postponing the

start. But Saturday, August 13th, was better. It was depressingly dull, the barometer had remained unmoved, but there was only a moderate southwesterly breeze. At 11.30 the fifteen yachts were started. Almost immediately low clouds, skating on the hills of the Wight, came down, vicious squalls blew once more and all the yachts were blotted out from one another by a cold, driving rain. Out from the lee of the island they met the full blast of it coming up Channel, not so strong yet, but the glass was trembling. One by one as darkness fell they stowed topsails, jib-topsails and reefed. It was a soaking job for all the crews and the tumbling seas rolling up from the Atlantic played havoc with the internal regions of nearly everyone in the race. Yea, even unto the crew of Nicanor, who had sailed immune from Boston, did the frolics of Neptune seem aught but a joke!

Wearily threshing against a strong wind and big, white-capped sea, the yachts slowly made their westing, like so many windjammers of old struggling round the Horn from east to west. Gear carried away, dinghies washed overboard, sails split, cabins flooded and galleys washed out—such were the tales of them as they staggered into various ports along the coast during the next few days. The wind reached a "fresh gale" (Beaufort scale force 8) on the Monday when Nicanor, Jolie Brise, La Goleta, Tally Ho, and Ilex were off the Start. Ilex was well within her time allowance, when she had the misfortune to blow two of her jibs to ribbons and to spring a leak. She was forced to run back into Plymouth. Jolie Brise had a "look at it" beyond the Lizard Light, but encountered a violent squall, lowered her mainsail and ran back into Falmouth to wait for easier weather.

By Tuesday, August 16th, thirteen of the fifteen yachts were safely in port. Altair was in Weymouth with a split mainsail; Shira had started a bad lead and with Thalassa had given up; Penboch had put into Dartmouth after a game fight; Nellie went back to St. Helens; Saoirse could not get to windward and ran back to the Solent; Maitenes was in Fowey with a split mainsail; whilst Content had the misfortune to be compelled to put into Queenstown, in Ireland, as her compasses were found to be defective. She would probably have completed the course otherwise.

Photo by Beken

ILEX

Twenty tons. The winner of the 1926 race. A fine type of healthy, cruising yawl

Meanwhile, out there in the dreary wastes of the Atlantic, a duel was being fought by two yachts, as plucky and as venturesome as many an epic of the sea. Frequently within sight of one another, La Goleta and Tally Ho fought inch by inch doggedly to windward, pitching and rearing frantically before the great, crested seas. It was a grim fight between a typical American-designed schooner and an equally typical English cutter. The schooner was the first to round the Fastnet and to square away thankfully for the home run. But Tally Ho was close astern, and do what she could, La Goleta could not shake the cutter off. With a wind that, after attaining nearly hurricane force in some of its wilder gusts, was now easing off, these two yachts raced back as they had never raced before.

Anxiety had been felt all round the coast about them, but on Friday, August 19th, La Goleta crossed the line at Plymouth at 1.40 P. M. and Tally Ho 52 minutes later. But the cutter's handicap was 8 hours, 53 minutes, against La Goleta's 3 hours, 55 minutes, 25 seconds, and so Tally Ho carried off the Fastnet Cup.

More than ever before had it been proven by this race that the terrible dangers of sailing a small, well found yacht out into the open in bad weather are mostly imaginary. Not a bit of gear was carried away aboard either of these yachts, yet they could hardly have expected worse weather anywhere round the British Isles. What is more, the crews of all the yachts declare that they enjoyed the experience in spite of the appalling physical discomfort and probably all these yachts, with several more, will be sailing in the following year's race. There is something about fighting a *real* gale in a well found small cruising yacht that can only be described as extraordinary exhilaration. No wonder the popularity of this race increases annually.

It has become obvious from the experience of these three years' races that the smaller yachts, those under, say 36 feet L. W. L., have little chance of success in the kind of weather they are *likely to meet* in August off Land's End. The Fastnet race course has proven itself essentially one for yachts of not under 36 feet L. W. L., and the Ocean Racing Club has decided to hold a separate point to point race of some 250 miles for yachts of less than 36 feet L. W. L. in future.

Which proves at least that British yachtsmen have "taken to" seagoing races with enthusiasm.

EDITOR'S NOTE.—Mr. Alfred F. Loomis, of New York, was the navigator on La Goleta, one of the two boats that finished the 1927 Fastnet race, and the only boat that was under way the entire elapsed time of this gruelling contest. The complete story of his experience, written by Mr. Loomis, appeared in the November, 1927, number of the *Sportsman*. It would serve perfectly as a note to Mr. Griffith's admirable paper, were it not for its great length. It is a great pity to mutilate a piece of work so perfect, but Mr. Loomis has graciously given me permission to pick out the high lights in his article, and to fashion this patchwork of them. In my selection of extracts I have sought mainly those which give the reader some idea of the severe character of the weather encountered.

"For a week it has been blowing half a gale in the English Channel. On the evening of August 12 toasts to the King and the President have been drunk in the banquet hall of the Royal London Yacht Club at Cowes, and the chairman has the floor. 'If it is very stormy tomorrow,' says he, 'the letter S will be flown from the Royal Yacht Squadron staff and the Fastnet Race will be postponed.' * * *

"But in the night the wind pipes down, and on the morning of August 13 fifteen cruising yachts drift across the starting line at the discharge of the gun. * * *

"Did I say that the southwest wind had died? Halfway to Nomans Fort it piped up again, and under main, fore, jumbo, reaching jib, and two topsails we tore along, our lee deck almost awash, ahead of us the Jolie Brise reaching out like a race horse. Next her the Nicanor, and then the Ilex. And Tally Ho on our port quarter. * * *

"The weather thickened and the wind increased and in the first two hours of sailing we came to know the discomfort of racing in the English Channel. Dunnose showed its blunt head momentarily through the drizzle, and we figured that we could carry the port tack around St. Catherine's. * * *

Photo by Beken

HALLOWE'EN

Fifty tons. The fast Bermuda rigged cutter designed and built by Fife for the 1926 Fastnet race. Her sail plan has since been altered to the orthodox gaff-and-boom rig.

"There was a sea off the point—a bad one with the west-going tide fighting the sou'west wind—and we took it over green. Peverley had built La Goleta under a myriad of difficulties which would have been insurmountable to many another man, and she was finished only the day before the start. Despite everything, her decks leaked and we were wet below. But we had not thought of the Fastnet as a midsummer holiday, and we were comforted in the way La Goleta sailed into the wind and blithely took her punishment. Our competitors drew out of sight—some ahead and some astern—and we plunged on.

"The next brush was with Nicanor. East of Swanage at nine-thirty that evening she cut across our bows when we were on the starboard tack beating out to clear St. Albans Race. In eleven hours we had thrashed fifty wet miles to windward, and here were the two American Schooners a hundred yards apart. We waved mutual encouragement as our courses diverged. * * *

"At two in the morning of the fifteenth, when off the Eddystone, the wind came ripping out of the west, and for the first time we shortened down to less than working canvas. With the foresail handed, the ship rode more easily and the watch on deck found it possible to enjoy the cold moonlight and the flying spray. The hours washed around, and at noon, tacking out to clear the Lizard, we once more saw Nicanor—and saw her under a rig which meant that the wind was really blowing. Ocean-going schooner though she is, she was hove to under her foresail. Jolie Brise, which we had watched during the morning fighting up toward Falmouth, had disappeared, and the only other contestant in sight was Tally Ho, working toward the Lizard under reefed main and spitfire jib. High though the seas rose, she seemed as steady as a church, and we watched her in silent admiration. Here, indeed was a competitor. * * *

"The glass fell steadily and the wind had more in store. By midafternoon we were hove to under reefed foresail, standing on the port tack toward the lee of the Lizard. Lieutenant Commander Boyd, of the Royal Navy, who navigated with me, said that in all his experience he had never seen a heavier sea off the Lizard. And it was heavy. Spray was not yet flying diagonally upward from

the cresting comber, but we knew that the wind was blowing. Force 8, we entered it in the log—a summer's gale and a little more.

"I slept that afternoon in my wet clothes and my wet blankets, and when Rawle hastily awoke me, a change had come over the ship. The reefed mainsail was going up and we were running off the wind. Why? Falmouth for shelter.

"On deck there was discussion and then agreement. In America, perhaps, we could run for port because the sea was high—but what would the English say? What, in fact, did Boyd say? He said it would look bad to put in. What did McOnie say? In his Scottish burr he agreed with Boyd. What did all of us say? That in an ocean race we mustn't avail ourselves of shelter merely because shelter happened to be available. The mainsail was furled again, La Goleta was jibbed over, and under our double-reefed fore we jogged her off the land. Jogged her off because the coke stove would burn only on the starboard tack and we were dripping wet below. So sailed, La Goleta made some leeway, but fore-reached, and the west going tide striking her lee bow for six hours, held us up to windward.

"By morning we had weathered the hardest of the blow, and at four, the galley range having burned itself out, we jibbed to the port tack. The wind had moderated now to a force of thirty-five miles, and we once more set the jumbo and the double-reefed main. But the slant came from the northwest, and, fighting a rushing tide, it was ten o'clock before we could say that we were definitely past the craggy Lizard. * * *

"In three days of the hardest kind of sailing, we had made good less than two hundred miles. * * *

"Yet at nine-thirty the air came gently out of the west, which permitted us almost to lay our course for the Fastnet, and by two in the morning of the seventeenth we were sailing on the port tack and having the satisfaction of watching the wind slowly haul to the southwest. The sea, under the influence of the tide flowing down the Bristol Channel, was confused, but the breeze was enough to fill our sails, and we moved easily. * * *

"In mid-afternoon our hearts sank. The wind now had easting

in it, and, blowing on our quarter, failed to get the most out of our fore-and-aft sails. * * *

"And then, as if that were not enough, gradually we found further cause for shattered hopes. For the day thickened as evening came, and in drenching rain we overran our reckoned distance to the Fastnet. What to do then? Fastnet Light stands on a detached

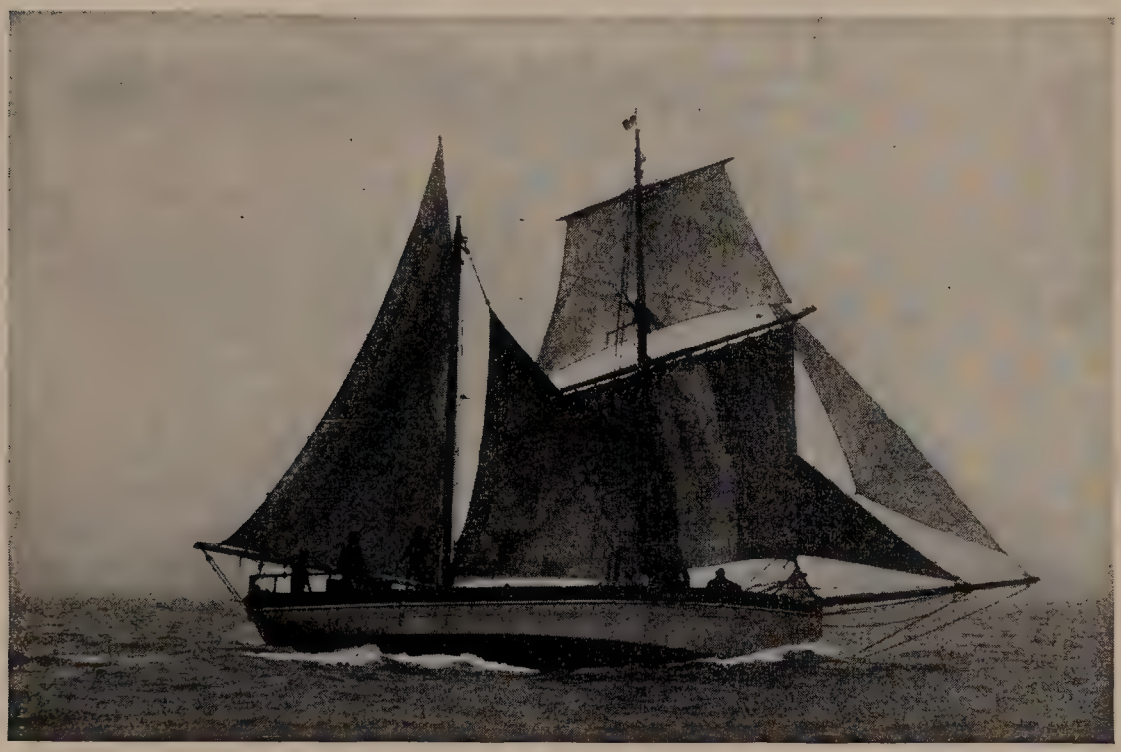


Photo by Beken

SAOIRSE

Twenty tons. Conor O'Brien's boat which has been round the Horn and most of the world. The " square-rigged-staysail-schooner " rig was a " try out " and proved poor to windward, but the boat herself is a fine little ocean cruiser.

rock three miles southwest of Cape Clear. If we had really run beyond the light we should soon find ourselves embayed on a rocky, hostile coast. If the wind increased and caught us on a lee shore, what then? Should we break the seal of our motor, and in saving our skins throw away the race after all? * * *

"Now ensued a period which might be called a weather prophet's paradise. Becalmed in the center of a low, any guess as to the

direction of the new wind was good. Within twelve hours it blew east, southeast, southwest, north, northeast, northwest, and intervening points. But first, since we were south of the Fastnet, it came out of the north, and we had to beat to round the light.

"At one thirty-five in the morning of the eighteenth, in pouring rain and freshening wind, we considered ourselves around and signaled our name and letter to the lightkeeper. * * *

"We had held Tally Ho to windward, and now if we could get a reaching wind instead of this northeaster that was commencing to blow the cold of the Arctic down our way, we felt that we had a chance to save our time.

"But the northeaster was undeniably there. Boyd said that a comforting thing about a northeaster in Irish waters was that it never blew at gale force. Two hours later when it was blowing a gale from that quarter he admitted his error and, with McOnie and seventeen-year-old David Parsons, lowered the fisherman staysail, waist-deep in water in the lee rigging. When the kite was in and he considered that his sin of making an unqualified prophecy had been expiated, he called all hands and we doused the main and took in the jib.

"Under foresail and jumbo we staggered along, logging six knots across a whole gale, dipping solid water aboard, wet to the skin and frozen to the marrow. For days our bunks had been wet.

"Now our changes of clothes and the clothes we wore were drenched, and there was little joy in ocean racing. Tally Ho, carrying on longer than we did, disappeared in the darkness, and we had other things to wish for than a reaching wind.

"Rawle and I, alternating at the wheel and beside the fireless range, wished particularly for hot food, and when the hour was seven we called the cook and he, crouching over a Primus stove, fried bacon and eggs for all hands. God bless Allan, the Liverpool cook, veteran of the second retreat from Mons, and jack of all trades! Each day, as he continued to turn out hot meals under the most stupendous difficulties, we rated him higher and higher in the degrees of cookdom until on that morning of the eighteenth we gave him five out of a possible four, Navy system of marking. * * *

"At that time Tally Ho was in sight again on our weather beam.

The topsail was set, and the balloon fisherman, and the reaching jib, and then La Goleta began to travel. Who, we asked one another, had said that ocean racing was a virulent form of idiocy? It was, in point of fact, that most glorious of sports. Log turning nine and then ten knots, and for one hour when it underwent a spasm of joyous delirium, eleven and a quarter knots! Bright, warm sunshine, marvelous rolling sea—and Tally Ho dropping astern like a disappearing gun in recoil. * * *

"Another good man was Peverley, the owner of La Goleta. All my racing days—they're not many, but they're very poignant—I've longed to sail with a skipper who would carry on. All crews of all ocean racers have the same longing. It isn't our boat we're racing, we haven't the responsibility of deciding when to shorten and it doesn't cost us anything if the spars give way. So we all say, 'Give us a skipper who will carry on.' And in Ralph Peverley we of La Goleta found him.

"At sundown black clouds in the northwest heralded the wind's increase and gale strength, and steering became a job for really expert helmsmen. Only the skipper, Rawle, and Boyd touched the wheel that night. So that we might carry on to the last minute a reinforced watch of six men kept the deck, and at ten o'clock the word came to hand the balloon fisherman. * * *

"When at last the word came to furl the jib I confess that, for me, at least, the race had reached its zero hour. Boyd and I made protesting Rawle tie a line under his arms, and as he hunched out along the bowsprit and I wrapped my legs around its middle, I thought of the two major possibilities. If Peverley steering a gambler's course, let her yaw half a point too much to leeward, he would jib and take the sticks out of La Goleta. If she got away from him in the other direction when there was no headsail on her, she would come on the wind like a bat out of hell, plunge into green water, and perhaps sweep Rawle, Boyd and me into the night.

"But there was little time for such gloomy reflections. 'Down jib!' I called. Boyd let go of the halyard and passed the word. Mac, awash in lee scuppers, loosened the sheet, and the sail went flying, dissipating its strength in resonant shaking. Down it flopped and in it came,—Boyd least secure of all of us as he staggered about

on deck receiving the sail as Rawle unhanked it,—and in less than three minutes we were back on board again. The jumbo went up, two men to the halyards, and the zero hour was past. * * *

"Now that we were on a broad reach I could once more take the wheel with safety to the crew, and of all the phases of the race, the good times and the bad ones, there is none that will stay by me like that romp across West Bay—the wind blowing a moderate gale and whipping up the spray—the sun trying its best to dry our saturated gear—the white river in the lee deck curling up at times to fill the cockpit and soak me to the waist—the main sheet starting to wash adrift and its ends caught in the nick of time—and the heavenly sustained susurration of the water as the fleet hull rode down the waves. It was payment a thousandfold for the weary days of beating to windward—and the final fillup that makes the spirit yearn toward ocean racing.

"There were other rewards of the Fastnet, come to think of it. We crossed the line first, which was something, and when Tally Ho crossed forty-two minutes later, beating us by better than four hours on corrected time, we knew that we had bowed to a magnificent boat, superbly sailed. It was something to learn that Nicanor, our American competitor, had kept on short-handed when three of her local crew had jumped ship at Falmouth, and had only withdrawn when a gaff snapped in the Irish Sea. And it was satisfying to hear that Tally Ho and La Goleta were the only two of fifteen starters to finish—all the thirteen reaching port in safety.

"I liked it, too, when George Martin, originator of the Ocean Racing Club and present vice-commodore of its sixty members, told us at the club dinner that Tally Ho and La Goleta had made history and that never before had such a race been run.

"Most of all I liked it when the Ocean Racing Club—but stand by a moment for a word of explanation. This club is at once exclusive and democratic. Nothing could be simpler than its rules of eligibility. Those, and those only, who have raced around the Fastnet may belong. So most of all I liked it when the Ocean Racing Club on a viva voce vote elected owners and crews of Tally Ho and La Goleta to membership. What price the fleeting hardships of ocean racing when this is the reward?"

A LANDLUBBER'S LOG

(Being the Impressions of One Who Shipped as Cook on the Windjammer in the Bermuda Race of 1926)

Illustrated and written by J. Fletcher Street

RIDING at anchor in the harbor of New London, Connecticut, the day before the start, we are surrounded by many types of schooners, yawls, and ketches, which are to be our competitors in the race. Even the uninformed can sense the speed of some of these by their trim lines and large sail-area. The English entry, the Jolie Brise, with its great bulk and wide beam, impresses one as altogether seaworthy but leaves some doubt as to its speed. We pleasantly conjecture upon the relative advantage the several boats will hold outside of their handicap.

Already I have been dubbed "Dr. Cook," with no reference, I may state, to that other sea rover, so named, of victorious repute. The skipper has been so generous as to include me in his crew, it is to be hoped that my cuisine may be at least satisfying, if not the most appetizing, to my hungry shipmates.

We visit the shops of the village to purchase additional supplies, rummage about interesting old antique shops and attend, at evening, a banquet given in honor of the sailing crews.

The First Day

Arise at daybreak. Already there is great activity among the fleet. After breakfast we weigh anchor and proceed down river, finding many of our contestants already under way. Approaching the mouth of the harbor it is an inspiring sight to see the procession of boats with sails set to the breeze, some ahead of us, but the majority bearing down upon us. We bear over to the starting line which is set between the bell buoy on Sarah's Ledge and the committee boat anchored some two hundred yards to the westward.

We learn that there are sixteen boats entered and arranged in two

classes. Two of these, the Countess and the Jolie Brise, are competing in another division as well.

All boats in Class "A" jockey for position as the preparatory gun is fired. At the start at 10.00 A. M. they make for the line,

Course of Race, New London to Bermuda

our own craft crossing two minutes later. Immediately we experience light winds, the boats to windward of us making better progress and the first to receive a strengthening breeze from the south. They lengthen the distance between us before a favorable wind fills the sails of the Windjammer.

At three in the afternoon we pass Block Island. Now the

Princess II and the Sagamore are close into the island, the Windjammer making her course about four miles offshore. The Malabar III is to starboard of us a mile away. All the rest appear far ahead to the windward. We can identify the Dragoon, Jolie Brise, Trade Wind, Blue Water, and Malabar VII. These keel boats can point a great deal closer to the wind than we in our shoal-draught, centreboard craft.

It is six o'clock when we take our departure from Block Island. The wind has veered from the south to east, southeast. With a

WE'RE OFF

"hard-a-lee" we go about and hold a south, southwest course, remaining on this tack until daybreak.

At sundown the Malabar III is abreast of us, the yawl Primrose II is three miles off our beam to the windward, the Black Goose and the Quita astern, and the Caroline slightly behind and five miles to starboard. Gulls and common terns are all about us over the ocean.

THE SECOND DAY

At four in the morning the wind, which had held from east southeast all night, veers to the east. By eight it has increased to a full sail breeze, the Windjammer surging along with decks awash. At nine we set a balloon main staysail, but the wind tears the head out of it. There is a pleasurable excitement about it all as I recall the lines of that incomparable old sea song:

> " A wet sheet and a flowing sea,
> A wind that follows fast
> And fills the white and rustling sail,
> And bends the gallant mast;

And bends the gallant mast, my boys,
While, like the eagle free,
Away the good ship flies, and leaves
Old England on the lee."

The Malay and the Caroline are hull down and astern of us all day. They are probably about ten miles away. We take a certain comfort in knowing we are not alone on this broad expanse of ocean.

"A Wet Sheet and a Flowing Sea"

By noon we have logged 139 miles. Black fish are noted and petrels fly across our wake all day, seemingly awaiting something to their advantage to turn up.

I experience seasickness. I am inclined to believe it to have been aggravated by my smoky oil range and ill-ventilated galley, but the crew receives this suggestion with a hearty laugh, while I am too miserable to protest. I have made a discovery, however. I find that by removing the hatchway I can actually stand upright at my cook stove, and with my head above the cabin top, all nausea disappears.

The Third Day

By one in the morning the wind has died away completely. From then until four we are bounced about in a very choppy sea,

making no headway. At daybreak a light air comes in from the south, but we experience a decided eastwardly drift, due to the current of the Gulf Stream, which we have entered. We have covered 271 miles.

A day of sparkling sunshine, of lounging in the cockpit, of watching this interminable waste of water. What a glorious sense of

READING THE SEXTANT

freedom dawns upon one's mind as the great waves surge by, their broad backs laced in ripples—to discover that one cannot be wanted, or if wanted, found and interrogated. It is a diversion to watch the petrels coursing near by to snatch up the particles of food which I throw from the galley.

The wind is light again at three, but it strengthens somewhat at evening for a short time only. Finally we are utterly becalmed, making but nine miles from sundown until midnight.

The Fourth Day

Still becalmed. The light and capricious airs of the Gulf Stream have abandoned the Windjammer to its lingering fate. We are using an old Marconi mainsail and a storm trysail to steady the boat as the rough seas are tossing us in every direction, with a consequent heavy shipping of the sails. The waves average from ten to fifteen feet high in varying directions. A few wisps of

At the Masthead

cumulus clouds appear in the morning sky but carry no wind with them. They dissipate shortly after sunrise. As the sun floats higher, the sea, at first a dull gray, has changed to an increditable purple and once more under the blaze of noon it shows a waste of broken emerald; while the blue abyss of day seems to yawn over the waters more deeply than ever before.

Such hushes do not always inspire a causeless apprehension; they are omens sometimes—omens of coming tempests.

" Oh, for a soft and gentle wind!
I heard a fair one cry;
But give to me the snoring breeze
And white waves leaping high;
And white waves leaping high, my boys,
The good ship tight and free—
The world of waters is our home,
And merry men are we."

Toward evening over the rim of the sea, a bright cloud gently pushes up its head. It rises and others rise with it, to right and left—slowly at first, then more swiftly. The wind at length re-establishes itself. First it comes in faint murmurs, then in strong puffs, finally with a free rush as if the last defences of the calm have been victoriously carried.

At sunset the sea is running high, the shearwaters and petrels accompanying the boat until lost in the darkness. A steamer is noted on the far horizon. A beautiful moon silvers the waters at night. Our craft pounds badly with a mighty shivering as it glides from the crests of the mountainous waves into their hollows. One must admire the staunchness of its frame. Stove plates jump from the galley range, dishes are thrown from their racks, the bow of the Windjammer buries itself in the water, the decks are awash, the boat rises and falls with the undulations of the heaving breast of the sea as we rush forward through the enormous gloom of space. An indefinite anxiety pervades us all. We are beginning to wonder how we stand in this race. We are not very hopeful of being in the running after seventeen hours of calm.

The Fifth Day

Cloudy in the morning with intermittent rain. We are pursuing a southeast course. The wind is on the increase by noon and we sail with the lee rail awash. Its force is approaching that of a gale. We are making 7½ knots and have covered 454 miles.

We take down the queen sail and relieve appreciably the incessant pounding of the boat. One of the steel backstays snaps so the skipper improvises one of rope. Even the strongest fabrics

of man's invention come to grief at times in conflict with the irresistible sea, so it is necessary to exercise ingenuity in refitting a disabled ship, replacing broken rigger work with old-fashioned hemp.

Shadowless and gray the day remains, there are violent squalls and mad bursts of lashing rain. Evening brings a sinister apparition, looming through a cloud rent in the west—a scarlet sun in a

THE NIGHT WATCH

green sky. A moment and the crimson spectre vanishes; a moonless night ensues.

We have reduced our sails to a fore staysail and a double-reefed mainsail. We mean to ride out the storm this way.

" There's tempest in yon hornéd moon,
And lightning in yon cloud;
And hark the music, mariners!
The wind is piping loud;

The wind is piping loud, my boys,
The lightning flashes free—
While the hollow oak our palace is,
Our heritage the sea."

The wind blows in enormous sighs, dying away at regular intervals as if pausing to draw breath, and in each pause can be heard the answering moan of the rising sea,—a billow for every puff, a surge for every sigh. What a depressing night it is. Not a star in the sky, no gleam in the water save a fitful phosphorescence; no horizon; no outline; no shape for the eye to rest upon. All through the night a straining of timbers, a weird whistling of the wind, an obscurity that seems without limit to submerge the universe. All praise to the night watch!

In the Cockpit

The Sixth Day

Day breaks over the infinite heaving of the sea as the flood sinks slowly back to its abysses, abandoning further attempts at plunder.

It is a spectral dawn, a wan light suffusing the eastern cloud banks. Low, heaving clouds sweep menacingly overhead but break away later to reveal a sky of blue with patches of beautiful cumulus clouds, rising tier upon tier, seemingly motionless and of the usual tropical character. Beneath us is a deep blue sea with innumerable wavelets, dancing and glittering in the sun, all swayed in one direction by a great, solemn swell that rolls from west to east.

At local apparent noon we are 156 miles directly north of Bermuda, having covered 561 miles of ocean.

The wind quickens perceptibly during the afternoon. The western horizon is luminous and beautiful at sundown. In the early evening banks of ominous clouds sweep over, suggestive of squalls but bearing no wind. High cirrus cloud patches show a transparent silver against the rising moon. At ten it is altogether clear.

The Seventh Day

The night watch reports a night of remarkable calmness and limpidity.

By eight it is perfectly clear with an unvarying canopy of deepest blue sky all day. This offers the first opportunity for drying our clothing and bedding, which has become much moistened by water, spray, and an excessive humidity. Everything in the nature of covering and garments is brought on deck and tied to sails, shrouds, and halyards.

It is a balmy day of light winds, pleasantly contrasted with the preceding ones. Many tropic birds approach our boat in the morning. They are beautiful creatures to gaze upon, of purest white, excepting for yellow bills and black feet, with elongated, central tail feathers streaming out beyond. They are known to seafaring folk as pilot birds and are said to come out to guide a ship to its harbor.

At six in the evening we espy a schooner some six miles off our starboard beam, the first boat of any kind that we have seen for three days. How this revives our spirits. Here, at least, is a contestant that we mean to beat to port. The skipper exercises all his ingenuity to better our progress and we feel sure at dusk that we have increased our lead.

The sky is limpid when, with the last gleam of sunset, the night spreads its veil over the deep. There is something precious and soothing in this beautiful, serene ending of the expiring day, a day vibrant and glittering and now dying in infinite peace without a stir or tremor. As the shadows deepen, the stars come out in all their resplendent glory.

There come days which can never be forgotten. This one has aroused every fine emotion in my being and with the prospect of picking up the Bermuda lights before daybreak it is impossible for me to do otherwise than stay on deck to await the dawn.

Tropic Birds

After ten o'clock, according to our navigators, it should be possible to pick up the lights of Bermuda. One of the crew climbs to the masthead, remaining there the better part of an hour. At a quarter to eleven he picks up the light on St. David's Head. Fifty-two minutes later it is seen from the deck, a point thirty-five feet lower in elevation. We are approaching the island exactly as our navigators said we would. They have done their work well.

The Eighth Day

At 12.45 in the morning we pick up Gibbs Hill light, an intermittent beacon flashing at ten second intervals. One-half hour later, North Rock light, the third on the island, comes into view.

Under a sky unspeakably brilliant it is a question for a while

whether we shall arrive at our destination before daybreak. Our distance offshore, however, is greater than we assume. Dawn comes on apace, the night stars fade and the glory of the dawn increases and brightens until with one exultant bound the sun appears.

We cross the finish line at 7.30, chronometer time, as the committee boat, lying offshore blows its whistle in recognition of our accomplishment. It has been a worthy adventure.

We find that ours is the tenth boat to reach the island. Under our handicap our position is finally placed as twelfth. The Dragoon was the first boat in, but the Malabar VII won the race on its time

BERMUDA AT LAST

allowance. All of the yachts reported unusually light winds and generally unfavorable weather throughout the race.

Now to see beautiful Bermuda. Its limestone cliffs, the wonderful transparency of its water, its numerous islands, the shifting light on its hills, its scented cedars, its picturesque cottages,—all call us to new experiences.

We have not won a race but have gotten a great deal more out of the adventure than that accomplishment alone could ever signify,—a separation, for a while, from the workaday affairs of life, a closer intimacy with the restless sea, the companionship of good fellows, the rivalry of sport.

" It is not so much that you win that counts,
But how did you fight and why."

EDITOR'S NOTE.—Having had the pleasure of knowing Mr. Street for many years, it is an added joy to write something about him. Mr. Street is a well-known Philadelphia architect (not marine), a member of the American Institute of Architects, the Art Club, the Academy of Natural Sciences, and other scientific societies. His professional training did little toward developing his cuisine attainments and his familiarity with a culinary department, but his courage and desire for adventure did. The courage he showed, however, was nothing as compared to the temerity Skipper Crabbe and his crew displayed when he was shipped as cook and was depended upon to look after one of the most important matters that make long ocean voyages in small boats bearable. It is no doubt true that Mr. Street had never cooked before this trip and in fact was without previous experience on the water. Without disparity of any kind, it is to be mentioned that he served as an amateur and as such received no pay, as did all the other members of the full amateur crew that sailed on the Windjammer. When cooking, Mr. Street showed all the application and hard work that he has applied in his life profession and research work.

Having been a member of the Windjammer crew, it is a pleasure to testify that with the exception of the genial skipper himself, Mr. Street did more than anyone else to make our long voyage a happy and healthful one. The philosophy of ocean cruising and racing long distances is first to provide a strong and willing cook, one that will prepare meals at regular times, in addition to emergency ones, and one that can sleep and get his rest at night in any old berth, irrespective of weather conditions and the bedlam that exists on a small boat between sunset and sunrise during bad weather.

On the trip to Bermuda that took seven days, the crew sat down to four meals each day, served at regular times. After each meal, weather permitting, everyone with exception of the helmsman relaxed at the table during the smoking of after-dinner cigars. It would be impossible for one not having experienced a trip of this kind to understand and appreciate how much comfort can be enjoyed. For those desiring good feeling and a willing crew on such a voyage, I advise the procedure about meals as mentioned.

Photo by Rosenfeld

WINDJAMMER CREW

The cook is the swarthy looking man at the left

The Bermuda Race is one of the finest of long-distance American races, and it is a race which, once twenty-four hours old, offers no harbors for safe refuge from storms, as is afforded in the entire course of the great Fastnet Race in England. The course sailed takes the boats through the treacherous Gulf Stream and east of the dreaded Cape Hatteras. It is of this race that Mr. Street writes so happily.

The August, 1926, issue of *Yachting* gives the following account of the weather experienced by the different boats:

"A brief summary of the weather may be of interest although it can be only general, as the yachts experienced different local conditions when from 50 to 100 miles separated them.

"For once the conditions at the start at New London were ideal. There was a light northerly wind blowing with a tendency to veer to N. E. All crossed on the port tack and broke out ballooners and spinnakers, glad to be off at last for Bermuda. Malabar VII and Cygnet got rather the best of the start. Before Race Rock Light was reached the wind came in southerly and reaching canvas came fluttering down as the yachts trimmed in hard. No one could lay the course, but Cygnet held up the highest while some of the others had difficulty clearing Block Island. Just before dark a shift came to the S. E. and all of the fleet came about and stood to the west of south. At 6.00 P. M. Jolie Brise crossed Dragoon and Malabar VII and led the fleet as darkness came, the sixteen yachts being strung out to the west and south of Block Island.

"The wind held at S. E. and moderate all night, and everyone hung on to all the kites that would draw, making westing while they could. It was calm the latter part of the night and then came in S. E. again, a dead muzzler. At daylight Jolie Brise was to windward with Dragoon; Blue Water, Malabar VII, Trade Wind, and Cygnet to leeward and abeam, or abaft the beam. As the day advanced the wind went back to eastward and let the fleet lie up more on its course, freshening around noon. Dragoon then took the lead, followed by Cygnet, to the west of her, and Malabar VII.

"The wind hung around S. E. most of the next night and day, so that each tack seemed the wrong one, but most of the yachts

Photo by Rosenfeld

WINDJAMMER

One of the best shallow draft schooners afloat. Designed by Charles D. Mower

strove to make some westing. It was well they did, as the next night there was a long calm and the current was running strong N. E. Then Wednesday morning a light northerly set in, to which spinnakers or ballooners were set, and held until 10.00 A. M. when the leaders had another spell of flat calm, with sails slatting and making but little headway. At 5.00 P. M. a light air from the S. W. came in and put the sails to sleep. This freshened to a hard sou'wester, which blew all night and next day. The sea got up, the sky was overcast, with frequent squalls of wind and rain, but all the leaders hung on to everything and made grand time, as the seas washed the decks from forward to aft. Back in the ruck the little fellows got it worse, with a velocity of probably 40 miles per hour for awhile. When this let go, after giving the yachts a fine lift on their way to the islands, they had moderate to light southwest to south winds and a smooth sea to the finish.

"Summary of the boats, owners, classes and order in which they finished in New London to Bermuda Race—June 20, 1926:

1. Malabar VII, owner John G. Alden, Class A.
2. Dragoon, owner R. N. Bavier, Class A.
3. Cygnet, owners Paul Hammond and Elihu Root, Jr., Class A.
4. Trade Wind, owner H. H. Anderson, Class A.
5. Jolie Brise, owner E. G. Martin, Classes A and C.
6. Blue Water, owner M. R. Smith, Class A.
7. Countess, owner L. G. Hamersley, Classes A and C.
11. Caroline, owner Roger Young, Class A.
13. Windjammer, owner Edw. Crabbe, Class A.
16. Quita, owner G. Woodward, Jr., Class A.
8. Black Goose, owner W. F. Downs, Class B.
9. Sagamore, owner E. W. Madeira, Class B.
10. Harlequin, owner G. Gallowhur, Class B.
12. Malabar III, owner Everett Morss, Jr., Class B.
14. Malay, owner R. W. Ferris, Class B.
15. Primrose III, owner O. S. Payson, Class B.

"Malabar VII won the Bermuda trophy for all classes together and first prize, Class A. Dragoon, second prize, Class A. Black Goose won first prize in Class B. Sagamore, second prize, Class B. Jolie Brise won first prize in Class C. Countess won prize for the first boat with all-amateur crew."

THE BUGEYE OF THE CHESAPEAKE

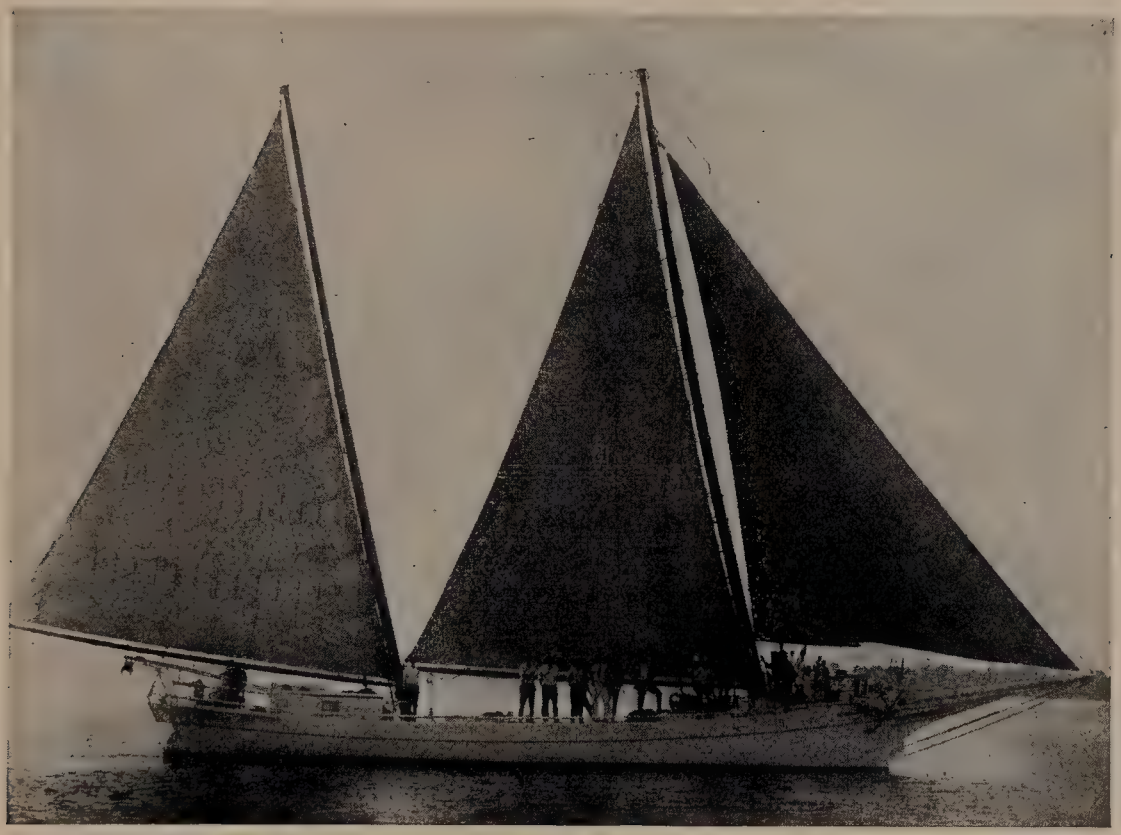
By Peter C. Chambliss

bug′-eye″, 1. bug′-ai″; 2. bug′-y″, n. A canoe made of several hewn planks, decked over and sharp rigged; the ordinary small sailing craft of the Chesapeake Bay, and its tributaries.

SUCH is the meagre description advanced in a standard dictionary of a type of craft, so utterly different from that sketchy word picture as to bring forth a lusty chorus of "It is to laugh!" from those familiar with the breed, a genus as distinctive of the Chesapeake as is the punt of the river Thames, or the junk of the China seas.

From that dictionary definition, the world at large may gain a mental picture of a diminutive, crudely made craft, a sort of skiff, as inadequate for playing the rôle of the workaday bugeye, as is the description of her within its learned pages. Down on the broad reaches of the Chesapeake it would hardly be recognized as one of the staunch seaworthy ships, of upwards of 100 tons burden or more, that can carry their "rags" long after larger craft have reefed down or sought sheltering harbor. It fails woefully to represent the bugeye's keen, graceful clipper bow; the ample but not too full-waisted midship section; the tapering sharp stern; the tall masts that rake sharply aft; the sharp-headed sails of the bugeye rig that were sharp-headed years and years before the Marconi rig became almost an obsession in yachting circles.

In my description of the Chesapeake bugeye, I have tried to present the facts as I have gained them first hand from direct contact with the type, or gleaned from builders and watermen who believe that their boats have qualities which make them second to no class of workboats that sail. Not a few of these boats are there



An excellent profile view of the Agnes Leonard of Cambridge, Md., one of the large frame bugeyes which participates in the annual Workboat regattas. The rake of the masts, the cabin aft, and a side view of the davits affixed to the " patent stern " may be seen. She is fast and won in her class in one of the Workboat regattas.

which have been converted to yachtsmen's use, and in that guise, they have been as worthy as they are in the toil of the sea.

In its evolution the bugeye has clung closely to a form which makes the tracing of its ancestry no difficult task. There have been slight variations, but in the main, the rule of the ancients has been so closely followed even in the building of the modern-day

bugeyes, as to give a certain guarantee to the expression "once a bugeye, always a bugeye."

For instance, there is the departure known as the square-rigged bugeye,—a bugeye hull with typical schooner rig. Though undoubtedly a schooner, if one accepts the theory that the rig determines the type, this class of craft to the majority still remains a bugeye. There also is the Brogan, a type found in the lower Bay, which might aptly be described as a bugeye hull with a square foresail and sharp mainsail and jib. There, too, are the three-masted bugeyes, but these, like the other hybrids, are in the minority, and only serve to strengthen our admiration for the true bugeye of our fathers and our grandfathers—with its sharp bow and stern, its two masts always raking aft, its three sharp-headed sails. And not a few of these true bugeyes which were built by our grandfathers, yea, our great-grandfathers, are sailing the Bay today.

The true bugeye may easily be divided into two classes—chunk boats, and frame boats.

The chunk boat is the older of the two and is so called because its bottom and lower sides are fashioned from the trunks of trees—hewn-out logs—bolted together, running the full length of the craft. The bottom of this type of boat may be 8 to 10 inches in thickness, gradually getting thinner toward the sides, which are built up to the required deck height by planking. The chunk boat has no ribs, but sturdy knees fastened to the log topsides support the deck beams and serve as a fastening for the topside planking.

The frame bugeye is built much in the same fashion as the ordinary sailing craft, from the keel up, with heavy ribs and frames taking the place of the solid log bottoms and sides of the chunk boats.

Whether of frame construction or of logs, however, the bugeye has maintained its characteristic canoe shape, pointed at both ends. There has been little or no change in the model which has maintained "as is" for more than half a century. The bottom is slightly rounded, though in the old chunk boats it is more likely flat in the midship sections. The keelson in most cases is straight and is nearly as long as the overall measurements, there being but

Start of the leading bugeyes in the Chesapeake Bay Championship Workboat Regatta at Solomons, Md., in June, 1926. On the bugeye at the left of the photograph may be seen a good view of the " patent stern " built out to give more room aft, and to give support for davits. The bugeye second from the left is carrying her yawl boat hoisted in the davits from the " patent stern."

slight overhang of deck at bow or stern. In some few cases the keelson may have a slight rocker.

The profile, starting with a graceful clipper bow that not infrequently is graced by a simple figurehead such as an eagle's head or scrollwork design, sweeps aft in a gentle dip to the waist, the point of lowest freeboard, and rises in about the same curve at the stern. The stern post is straight though raking aft from the point where it meets the sheer.

Viewed from above, the canoe shape of the deck has been somewhat changed in recent years owing to a patent stern with which most bugeyes are now equipped. It starts from the low rail on either side, about 12 to 15 feet from the stern post, and spreads out slightly fanshape to join a heavy cross beam that is fixed just aft of the stern post. It is a simple platform slightly raised above the line of the deck and gives the stern a square shape from above.

This stern was the idea of one Captain Joe Robbins of Cambridge, who is said to have conceived it when a rambunctious sea rolled him overboard from the sharp stern of his bugeye during a bit of weather in the Chesapeake. That was about twenty years ago.

Captain Robbins thought his idea a good one and obtained a patent on it. Henceforth, every bugeye that sported the superstructure on the stern meant that its owner had paid the Cambridge skipper $25 for the privilege. Hence the term "patent stern."

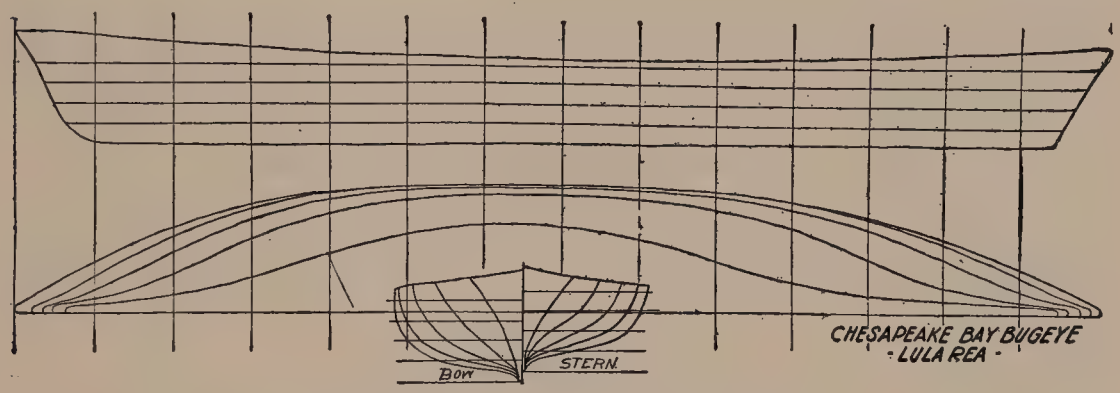
Besides giving added space for the handling of sail, storage, and carrying capacity, the patent stern affords means of fixing davits by which bugeyes may hoist their motor yawl or push boats.

The term "push" boats is meaningful. During a calm the captain of a bugeye with a motor yawl boat is pretty apt to drop the stern of the yawl boat into the water, keeping the bow hoisted, start the engine, and chug-chug merrily on his way.

The deck of the good-sized bugeye, 60 feet or more in overall length, is broken first just aft of the foremast usually by a small hatch leading to the forecastle, the quarters of the crew. Aft of this in the waist of the boat is a hatch about 10 feet square which has movable covers built in sections for convenience in handling. This gives directly to the hold which in frame boats is sheathed for the carrying of cargoes of oysters, fish, grain, watermelons, and

other produce in season. Aft of the mainmast rise the sides of a square cabin where the skipper and his mate have their quarters. The cargo hold is bulkheaded to separate it from the main cabin and the forecastle.

Starting forward of midship the keelson is pierced by the centreboard slot which extends forward for 10 or 12 feet, according to the size of the craft. The heavily constructed centreboard well divides the forward part of the cargo hold from fore to aft, housing the heavy board which enables the craft to sail in the shallow tributaries of the Bay. Without the centreboard construction the bugeye would be almost useless in the work she does, for she is



CHESAPEAKE BAY BUGEYE, LULA REA
One of the earliest of the frame bugeyes built by the late George T. Johnson of Cambridge, Maryland

often called upon to penetrate the rivers and creeks of the Chesapeake in order to pick up her cargo for market.

Then, too, in oyster season, she is used for dredging oysters on bars where she would frequently be in trouble were she of deep draught.

In oyster dredging time heavy iron winders (usually gasoline drums) are fastened to the deck just forward of the main hatch. This is to wind in the oyster dredges, an arduous task which up to a few years ago was done by windlass and man power. Aloft there is a simpleness of rigging and sail arrangement that appeals strongly to the skipper who works his ship with a small crew.

The sharp-headed sail has proved one of the mainstays in the

popularity of the bugeye whether for work or pleasure, for though the leach of the sail may rise 70 or more feet along the mast, the man power needed to hoist it is a minimum.

Indeed, it is no strange circumstance to meet bugeyes plying on the Bay with no crew other except the Cap'n and one, and that one extra hand may be nothing more than a half-grown boy.

Under ordinary circumstances a crew of two suffices. If sudden shortening of sail is necessary, the handiness of the bugeye rig is again apparent, for it requires but a moment to drop the foresail, and under mainsail and jib the average bugeye works as handily as a ketch or yawl. The raking masts are credited with making them wonderful boats for windward work.

The rig of the bugeye is as characteristic as the name. Even the veriest tyro is able to identify it once he has cast his eye upon the three triangular sails—mainsail, foresail, and jib. Only one bugeye of the true type on the Chesapeake that I know of, and I believe that I have at least a speaking acquaintance with the majority of them, carries more sail than those named. The Emma A. Faulkner of Cambridge, a 74-foot craft, has in addition to the regular bugeye rig, a flying jib and a staysail, giving her five working sails, instead of three.

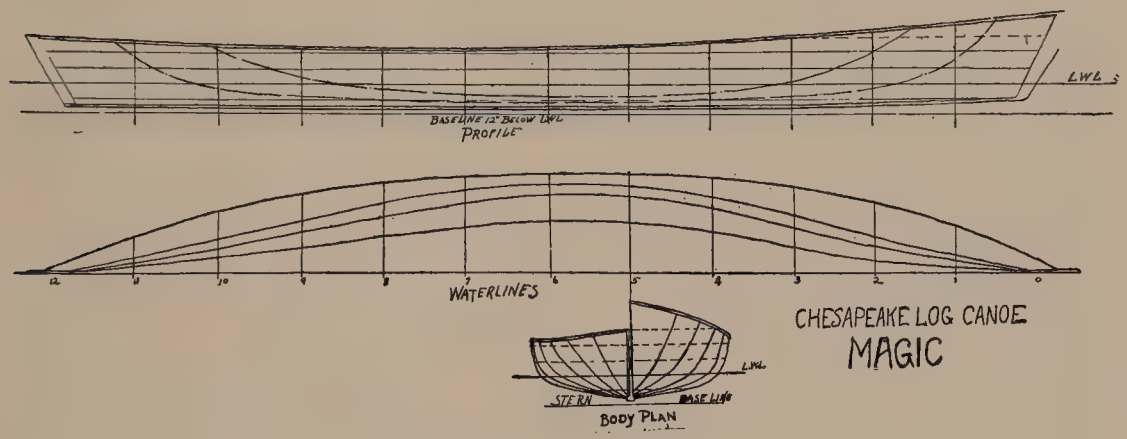
In the bugeye, the foremast is set rather well forward in the eyes of the boat, and the foresail is the largest piece of canvas she carries. The mainsail is slightly less in area than the foresail and may be said to just about balance the jib which is of goodly size. The boom of the mainsail projects over the stern of the craft but is a workable rig even in the most severe weather.

While the bugeye rig easily distinguishes itself to those who know it, the hull is no less recognizable even though shorn of its masts and built up in various ways as is only too frequently the case when power supplants the sails. It is difficult so to alter the canoe hull that one familiar with it cannot fail to pick it out easily from a hundred assembled craft.

The manner in which the bugeye got its name is not the least interesting about it. Strange as it may seem, builders of bugeyes, owners of bugeyes, and captains who have sailed them for many years are just a bit hazy as to the exact source of the word.

How did the bugeye get its name? Why did they call it a bugeye? These and similar queries I have asked many times of old salts of the Chesapeake and from a variety of responses, two theories seem to be most generally accepted.

First, in the old days when the bugeye was in a state of transition from the ancient Chesapeake log canoe, a builder of the day was finishing up his craft in the edge of a forest. He had rounded out the hawse holes in the bow of the craft and was standing some little distance away, admiring the lines of his handiwork, when he noticed that the two holes he had just finished gave the bow the similarity of a head. In his mind it was the head of a deer. "Why,



CHESAPEAKE BAY LOG CANOE
An early model from which bugeyes were developed

it looks like a buck's eye," he exclaimed. From then on the craft were known as buckeyes." The name, however, didn't stick. It was too hard to pronounce. In time the hard sound of "ck" was softened by the slurring over into "g."

Another explanation offered was this: In early stages of the bugeye there was no standing rigging to which to fasten lights. Hence the light was placed in the bow. In the dusk, as the bugeye came head-on toward one, the gleams of the light shining through the hawse holes gave some mariner of bygone days the thought that they looked like bug's eyes. Hence the term.

At any rate, bugeye we have and bugeye it will probably remain, though with no assistance of Uncle Sam. The identity of the craft

is entirely obscured in the registration of sailing vessels in the Custom House. In the Shipping Register they are classed as schooners.

The life history of the bugeye, as the craft we know today, covers probably a span of from sixty to seventy years. Its forebears lived long beyond that; and, indeed, it is not hard to believe that when Leonard Calvert, first Governor of the Maryland Free State, sailed into the Potomac in the year 1632, he very soon made the acquaintance of the first limb of the bugeye's family tree.

In truth, it was the trunk of the native tree, for the bugeye of today is undoubtedly the outgrowth of the old Indian dugout canoe, laboriously hollowed out with fire and stone implements. The dugout probably had one or both ends blunt or only slightly pointed. But it is not difficult to imagine that the white man's ingenuity and his more suitable tools gave to the crude craft a sharp bow and stern, the chief characteristic of the famous Chesapeake log canoe, which marked the first step in the development of the bugeye.

One of those ancient dugouts became so famous that its deeds are still retold by the residents of Tangier, Deal's, and Smith's Islands, which lie midway in the broad stretches of the lower Chesapeake. That dugout or canoe was known throughout the islands of the lower Chesapeake as The Methodist. It was owned by the Rev. Joshua Thomas, who used the craft for more than fifty years in spreading the Gospel of Methodism through the adjacent islands. The Rev. Thomas, who was known as "The Parson of the Islands," sailed her in fair wind and foul until about 1850, in his revival work among the islands and on the mainland. It was the Rev. Thomas, who, during the War of 1812, when the British had established a rendezvous near Tangier Island, predicted to their commander that they would never take Baltimore; and, as is well known, they did not.

The Methodist, a hallowed portion of which yet remains on Tangier Island, was thirty feet in length, of about six feet beam, and was hewn from a single log. She was said to be the largest canoe ever made from a single log. The Methodist carried two sails, a mainsail and a foresail, both of the leg-o'mutton spritsail type.

With the natural scarcity of large timber and the demand for

larger craft, builders of canoes forsook the single log type and began fashioning them from two, three, four, and five logs, the full width of each log being represented in the bottoms.

Most of these early canoes were built by rule of eye and it was not until a much later date that they were laid down according to line and model. So expert did those hardy builders become that some of them could go into widely different sections of a forest, and with adze, axe, and drawknife, fashion the centre, and side logs separately. When brought together, the whole would fit as neatly as if they had been worked out side by side.

The bottom logs were at first fixed together with long wooden treenails (dowels), but later huge iron bolts were employed. It was not unusual for a canoe to have bottom logs of three or four inches in thickness, the side logs, however, being tapered to plank thickness upon which the sides were built up. As long as the bottom logs were sound there was no limit to the number of times that the top side planks could be replaced. The life of a canoe often ran into scores of years. There are canoes sailing the Bay today that were built more than half a century ago. The logs running lengthwise, and the thickness of several inches in the bottom, the absence of ribs made them ideal craft in the handling of their cargoes of fish and oysters.

In the eighties and nineties canoe racing became a favorite pastime amongst tidewater Marylanders and some remarkably fast canoes from various sections used to assemble at Oxford, at Claiborne, St. Michael's, and Baltimore for canoe regattas.

One of the most famous of these ancient racing canoe builders was the late Captain Sidney Covington of Tilghman Island, who built a series of boats, in the names of which the word "island" always figured. Collectively, they became known as the Island boats. Separately, they were the Island Bird, the Island Blossom, the Island Bride, the Island Belle, and others.

The sport of canoe racing is even now indulged in on the Chesapeake, being kept alive principally through two agencies—the *Evening Sun* of Baltimore and the Miles River Yacht Club of St. Michael's, Md. The *Evening Sun*, prompted by a desire to continue the great sport of competitive sailing races, in 1920 inaugu-

rated the Chesapeake Bay Championship Workboat Races, in which the famous Chesapeake log canoes, bugeyes, skipjacks, schooners, and other workboats of the Bay competed against boats of their type in an annual series of races for the honor of being known as the fastest of their kind on the Bay.

Substantial cash prizes awarded by the *Evening Sun* and the natural love for racing boats have resulted in the annual workboat regatta of the Chesapeake Bay being eagerly awaited from year to year, as the biggest water event of the Bay.

A further impetus to canoe racing has been furnished by the Miles River Yacht Club which, with the sanction of Governor Albert C. Ritchie of Maryland, donated a perpetual trophy known as the Governor's Cup to be raced for annually at the Miles River Yacht Club Regatta.

When racing, these canoes carry sail out of all proportion to their hull, and indeed they appear to be nothing but a cloud of canvas. Their regular sails are mainsail, foresail, and jib, the sprit still being in favor for stretching the foresail and mainsail to drum-like tightness.

The huge triangular jib works on a jib boom which is fastened to the end of, and projects several feet beyond, the bowsprit. In racing, a crew of live ballast is carried, the men frequently having to crawl out on long springboards over the weather side to keep the heeling craft on her feet.

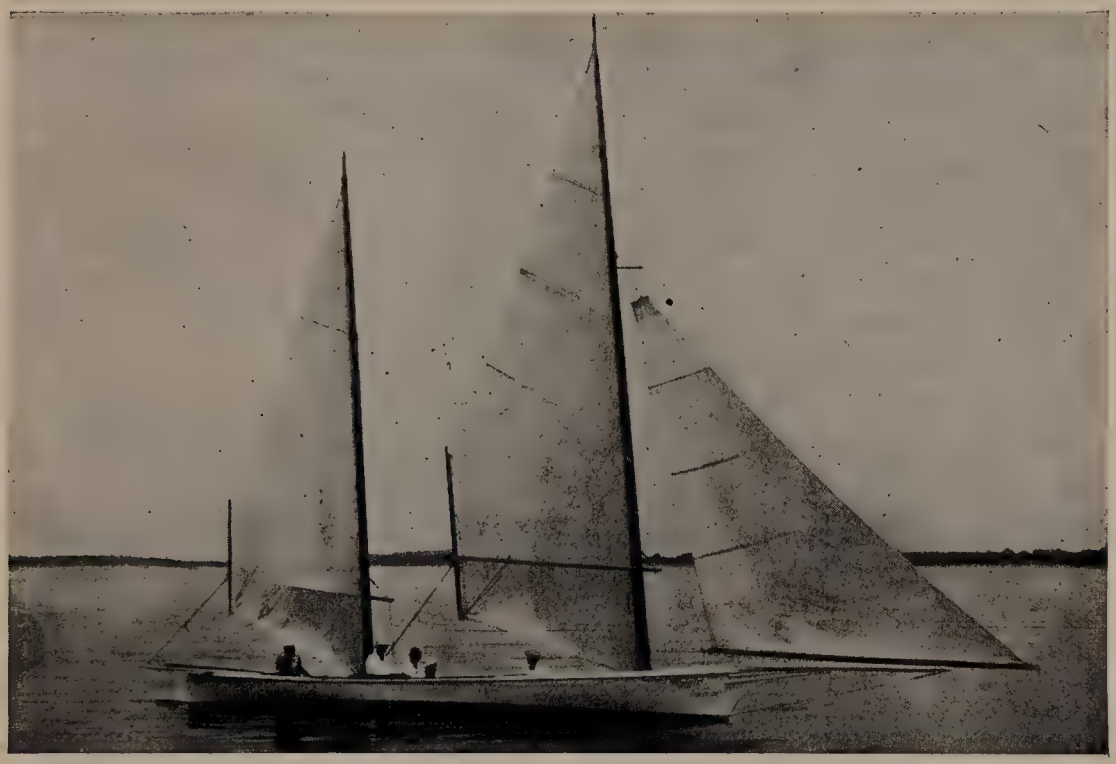
A glance at the towering sticks of the photograph of the Magic, one of the famous racing canoes and first time winner of the Governor's Cup, gives an idea of the amount of canvas they carried. I have many times seen the crew of these craft sail them into shallow water at the finish of a race and then jump overboard, grasping the sides of the boats to hold them upright until sail could be lowered.

The racing of canoes, however, was a side issue with their owners. The canoe, like the bugeye, was primarily a workboat, used in the tonging of oysters, in crabbing, and fishing.

The transition from the canoe to the bugeye was no sudden change. Larger and larger grew the canoes until finally around the year 1870 they became so large that they were simply undecked bugeyes.

These overgrown canoes, however, were not known as bugeyes. Between the canoe and the bugeye came the brogan, a short-lived term which was given the canoe of large proportions.

Besides being of an undecked type, the brogan did not always show the typical rig that is characteristic of the bugeye. There were some that sailed under a rig of large sprit mainsail, that



Photograph of the famous Chesapeake Bay Log Canoe, Magic, which was one of the fore-runners of the bugeyes. The Magic is shown in her racing rig winning the Governor's Cup at the Miles River Yacht Club regatta, St. Michael's, Md., in 1927. Ordinarily, in her working rig, her foresail would be a little smaller than the mainsail of racing outfit. In working the canoes do not use a jib, and frequently only the foresail.

stretched almost back to the stern, and a jib; and there were others that carried a square foresail with sharp-headed mainsail and jib. The brogan, or the undecked bugeye, was of log hull, the hewn-out logs running the full length of the craft and being fastened together with iron bolts or wooden treenails.

The masts in these craft, huge as they were—8 or more inches

in diameter, and 40 or more feet in length—were not stationary or fixed. A convenient combination of a mast seat, with a mast hole, the after part of which was formed by a hinged iron strap that could be loosened, permitted the mast to be lowered by letting it tilt toward the stern of the boat. A mast step was commonly called a "tumbling block," for the reason that the portion holding the butt of the mast worked on a pivot, making the operation of lowering and raising the mast easier.

These brogan masts, and indeed the first of the decked over bugeyes, had no standing rigging unless perhaps a jib stay that was arranged so that it could quickly be dissembled in case the necessity for lowering the foremast should arise.

Among the oldest and largest of these brogans was the Minnehaha, 56 feet, 2 inches overall, 12 feet, 7 inches beam, and 2 feet, 8 inches draught, built in 1873 at Cambridge, Md. She was a typical log-bottom brogan, and was undecked when first built though later she was decked over. A few years ago she was stripped of her sails and a motor installed, and with this equipment she is in use today.

Another of this type of boat which is yet doing service on the Bay is the Mob Jack, built in 1874 in Somerset County, Md. She is 43 feet overall, 11 feet, 8 inches beam, and 2 feet, 9 inches draught; she was later decked over. And yet another is the Irene, built in 1873 by the late Thomas Byrd, at Lawsonia, Md., a builder who turned out many boats noted for their speed. The Irene, too, was later decked over and is now owned by James Edward Todd, of Crisfield, Md.

Among the most famous craft from the hand of Thomas Byrd, perhaps, is the bugeye, George Todd. She is now owned by Captain Clarence Todd, of Crisfield, Md., the third generation of the name to possess her. Like the prized piece of property that she is, she has been handed down from father to son and has been the means of earning for the Todds of Crisfield, thousands of dollars in her years of existence.

The George Todd is a chunk boat, 52 feet overall, 14½ feet beam, and 3½ feet draught. Like the majority of the boats whose bottoms are formed by the hewing out of solid logs, she was built by rule of

eye instead of scaled to model. She was built in 1883 for George Todd, grandfather of the present owner. From him she passed into the hands of George Todd, Jr., and when he gave up "following the water," she came into possession of his son, Captain Clarence Todd.

The George Todd of Crisfield, Md., which in four of the seven Chesapeake Bay Championship Workboat Regattas has proven herself to be the fastest of her kind on Chesapeake Bay. The photograph shows her jockeying before the 1927 Workboat Regatta held at Oxford, Md., where she handily won in the bugeye class.

No faster boat of her kind has probably ever sailed the Chesapeake than the George Todd. She has been piloted to four victories in the bugeye class of the Chesapeake Bay Championship Workboat races, bringing honor to her owner who is the proud possessor of four silver trophies as evidence of her sailing qualities. The Isaac Keeler, a sister boat of the George Todd, and also owned by a

member of the Todd family, is said to be quite as fast as the George Todd, though in official contest they have never met.

It was not long after the building of the Todd and the Keeler that the fashions in bugeyes again underwent a change. The scarcity of big timber, making it difficult to get logs with the required length and breadth from which to fashion the bottoms of the craft, brought about the building of frame bugeyes, which in construction are similar to other types of sailing vessels. In shape they conform to the true log bugeye and its ancestors, the brogan and the Chesapeake log canoe.

One of the first frame bugeyes ever built was the Lulu Rea, built in 1885 by the late George T. Johnson, founder of the George T. Johnson & Sons Marine Railway, which is still in operation at Cambridge, Md., under the guidance of Brice W. Johnson, to whom the writer is much indebted for assistance in gathering data for this article. The Lulu Rea, 55 feet overall, 14 feet beam, and 2 feet, 9 inches depth, was considered one of the fastest and largest bugeyes of her time.

In fact, the elder Johnson gained a considerable reputation for turning out swift boats of the type. Among others which he built were the Volunteer, the Longfellow, and one with a name that sounded like a corporation—the Brown, Smith & Jones.

The Longfellow, a 49-foot craft, was completed in twenty-eight days from the time her keel was laid until she was launched fully rigged and ready to sail. The story goes that the owner struck a conditional bargain with the elder Johnson, to wit: "That if he could build him a bugeye within a month he could go ahead with the job." Johnson took him at his word and the Longfellow was delivered on the twenty-eighth day.

In 1893 Johnson built the bugeye, Brown, Smith & Jones, for the Maryland Oyster Navy which was the policing agency of the State Industry in Chesapeake Bay waters. Of necessity she had to be a fast boat in order to cope with the oyster pirates and craft that broke the oyster laws. It was said that at the time she was built nothing could outsail her. She was the largest boat of the bugeye class built up to that time, being 70 feet overall, 18 feet

beam, and 5 feet deep, and her arrival in any port of the Bay was the occasion for wonderment. She was named in honor of the three members of the Board of Public Works. When the question of a name was broached, neither of the trio would accept the honor. The builder compromised, conferring the laurels upon all—jointly. This bugeye is still a member of the State Conservation Depart-

Photograph of the framed half model of the bugeye, Brown, Smith & Jones, built by the late George T. Johnson of Cambridge. The frame containing the model is five feet long. Putty arranged in waves and painted to simulate the water forms a resting place for the model. The scenery and background is painted on cardboard. The model and the bugeye were built in 1893. The model is now in the possession of the writer.

ment's forces, being the only sailing craft in the state's marine police forces.

The Brown, Smith & Jones was never intended as a cargo boat or a workboat in the strictest sense of the word, and therefore, instead of a large hatch occupying the major portion of her midship section as in most bugeyes, she has a large and comfortable cabin furnishing ample living quarters for her crew and officers. The

craft was perhaps the first ever rigged out in yacht fashion, and in anticipation of her duties, her builder constructed her with a little more freeboard in her waist, which allowed full headroom without an ungainly top-heavy looking cabin.

In the conversion of bugeyes to yacht uses, particularly in the smaller craft, it is almost impossible to realize headroom without marring the lines of the boat by the addition of what appeared to be an unwieldy cabin.

This, perhaps, as much as anything else, accounts for the fact that so few bugeyes are seen in the fleets of yacht clubs. Then, too, the man who is able to maintain a yacht of the size that a bugeye would have to be in order to gain adequate modern accommodations, usually prefers a different type of craft.

EDITOR'S NOTE.—Mr. Chambliss was born in Cleveland, Tenn., in the foothills of the Cumberland Mountains, which is far enough from sailing water, surely, to have given no hint of his passion for the sea. He moved to Baltimore at the age of seventeen and there got his first glance at a sailboat. Like all Baltimoreans, he sought the eastern shore of Maryland, and on the Chesapeake he received his first training which led him over a period of years to own boats of all types—bateaux, skipjacks, sloops, Cape Cod dories, and, last and most popular of all, the yawl Ventura.

Mr. Chambliss is a member of the Maryland Yacht Club and of the Miles River Yacht Club. Beside his interest in these, he organized, and now conducts each year, the workboat races that are held under the auspices of the *Baltimore Sun*. He is assistant city editor of that newspaper and as a side-line takes care of two occasional columns with the titles, "Rounding the Buoy" and "Fisherman's Luck."

The bugeye, as a pleasure craft, has no more enthusiastic booster than Dr. Norman Essig, of Philadelphia, who has been (as he expresses it) "Shipmate" to one for many years. He can, and will, talk indefinitely upon this subject, but his testimony boils down to this:

"After several years of trial with this boat of the Chesapeake, I am convinced that they will go anywhere, at any time, with the

fewest men to handle them. They are inexpensive to own and run, they are capable of as many comforts as any other sailboat, despite the fact that they are sharp at both ends, and I certainly believe that one man can handle a larger bugeye alone, if he has to, than any other type of sailboat known."

TRANSATLANTIC RACING

With Records of Pleasure Boats and Clippers

By William U. Swan

"Every man should have in his life the experience of building at least once, but to build a home on the deep, a cottage with a keel, or a three-storied Argosy for long marine flights is the happy lot of not so many."

HESE quickening words were written, from a full heart, by Thomas Gold Appleton, of Boston, in 1866. They were inspired by the remarkable transatlantic voyage which had just been accomplished by his sloop Alice. It was this exploit which gave the first impetus to the rage for transatlantic yacht racing, which will have its latest expression during this summer of 1928 in the ocean race from New York to Santander for cups offered by the Ferdinand and Isabella of the twentieth century, more familiarly known as King Alfonso and Queen Victoria of Spain.

It is also interesting to note, in passing, that this fifth ocean race in sixty-two years is the suggestion of Henry Howard, for many years one of the most indefatigable yachtsmen that Boston has ever produced.

The success of the Alice, 'way back in 1866, in making the 2,998 miles from Nahant to the Needles in 19 days, 8 hours, and 50 minutes, under the skillful skippership of the late Arthur H. Clark, and carrying her full racing spars and sails, stimulated a triangular contest the next winter between the schooners Henrietta, Fleetwing, and Vesta, yachts twice the size of the Boston sloop, but also lofty sparred and broadly canvassed. Four years later came the Cambria-Dauntless match; in 1887 the Coronet-Dauntless contest; and finally in 1905 the big race for the German Emperor's Cup, in which eleven yachts carried the flags of three nations, with the schooner Atlantic leading the fleet and setting up a transatlantic record of 12 days, 4 hours, and 1 minute. This ocean championship the Atlantic will defend in the Spanish race this summer (1928).

THISTLE

A great boat of not so very long ago. She crossed the Atlantic in 1905

The ease with which the Alice accomplished the passage of the ocean with a comparatively small crew, engaged the minds of the yachting world almost as fully as had the victory of the America fifteen years before. And no one was prouder and less boastful of her exploit than her owner, who with his Nahant friends, Henry W. Longfellow and Capt. Robert Bennett Forbes, followed her across in a steamer. In the cabin of the little sloop, as she lay at Cowes, the delighted Boston merchant learned from Charles A. Longfellow and Henry A. Stanfield, who had made up the afterdeck crew, how Arthur Clark, who had suggested the transatlantic voyage while the yacht was on the stocks at Portsmouth, had sailed the little craft as if she had been a China clipper, with no damage and very little in the way of discomfort.

New York was not long in challenging Boston's yachting supremacy on the North Atlantic and within three months Franklin and George Osgood, owners of the schooner Fleetwing, had matched their craft against Pierre Lorrilard's schooner Vesta at $30,000 a side. Subsequently James Gordon Bennett was allowed to enter his Henrietta, a slightly smaller schooner, for an equal amount of stake money.

Four years later Mr. Bennett, who had purchased the schooner L'Hirondelle, a Stonington, Conn., production, and had sent her to England, matched her as the Dauntless in a transatlantic contest against the schooner Cambria, owned by James Ashbury, and the first challenger for the America's Cup.

The race was from Daunt's Rock off Queenstown to Sandy Hook lightship, for a $1,250 silver service. The yachts were sent away on July 4, 1870, with Mr. Bennett's favorite skipper, Captain Samuels, at the wheel of the Dauntless, and Capt. James Tannock in command of the Cambria. Neither yacht saw the other after the first day out until a few hours before the finish, which the Cambria reached an hour and 12 minutes ahead of the American boat. The Cambria's time was 23 days, 5 hours, and 42 minutes. She had a rough voyage and lost two men, while she took the shorter course and passed within sight of Newfoundland.

Although there were numerous international yachting contests between Great Britain and the United States following the visit

PRIMROSE IV

An Alden Schooner that sailed to Europe in 1927 to enter the Fastnet race

INGOMAR

One of the finest modern schooners to make the trip across the Atlantic Ocean

of the Cambria, no one seemed to favor an ocean race; but in 1887 a couple of members of the New York Yacht Club, Caldwell H. Colt, who had bought the Dauntless, and Robert T. Bush, who had recently built the big schooner Coronet, became involved in a friendly controversy and put up $10,000 a side for a transatlantic contest.

This race was from New York to Queenstown, the start being on March 11, off Owl's Head, and the finish at Roche's Point. The new Coronet had no difficulty in disposing of the twenty-year-old Dauntless, finishing nearly a day ahead, and making the distance in 14 days, 19 hours, and 3 minutes; the time of her rival being 15 days, 18 hours, and 31 minutes. The Coronet's best daily run was 291 miles, while the Dauntless logged 328 miles in one day. The latter was again sailed by Captain Samuels, and had such a rough passage that her water butts were stove in; and for the last few days all hands refreshed themselves with beer, claret, and finally champagne.

In 1905, the German Emperor having taken up yachting and winning a few races against his uncle, the King of England, sought to revive ocean racing by offering a tall shining vase of elaborate design and of seemingly great intrinsic value for a race over the time-honored course from New York to Cowes. It was not until twelve years later that Commodore Wilson Marshall, who won the cup and learned its true value when he offered it as so much bullion for a war charity, found that the pewter of which it was fashioned was worth about $35 in open market. "I wish it had been lead," said the disgusted yachtsman, "and then we could have fired it back at the faker."

But twenty-three years ago, the Kaiser stood at the pinnacle of his career, especially as a yachtsman; and eleven able craft—eight Americans, two Englishmen, and a German—gathered around old Sandy Hook lightship one dull May morning.

The starters in the German Emperor's race were the following: the Hamburg Verein and Northdeutscher Verein's Hamburg (formerly the Rainbow), George Lauder, Jr.'s, Endymion, Edward R. Coleman's Hildegarde, Dr. Lewis A. Stimson's Fleur de Lys, and Robert E. Tod's Thistle, all two-masted schooners; Wilson Mar-

YACHT ALOHA (NEW)

She is expected to give a good account of herself in the Spanish transatlantic race next season

shall's Atlantic and Allison V. Armour's Utowana, both three-masted schooners; Lord Brassey's topsail schooner Sunbeam, Edmund Randolph's bark Apache, the Earl of Crawford's ship Valhalla, and Henry S. Redmund's yawl Ailsa.

At the wheel of the Atlantic stood Charles Barr, the greatest skipper of his time, who had sailed the Columbia to victory in 1901, and had handled the Reliance magnificently two years later in the second and third international contests for the America's Cup. Twice in mid-Atlantic the afterdeck guard on the Atlantic implored the doughty little Scotch skipper to heave to, and each time he shook the spray off his yellow sou'wester in stubborn refusal.

The Atlantic would have accomplished the passage in less than twelve days had not the wind failed at the finish, but the mark which she hung up will probably stand for many years.

The time of the eleven yachts in the German Emperor's race from Sandy Hook Lightship to the Lizard were as follows:

	Days	*Hours*	*Minutes*
Atlantic	12	4	1
Hamburg	13	2	6
Valhalla	14	2	33
Endymion	14	4	19
Hildegarde	14	4	33
Sunbeam	14	6	23
Fleur de Lys	14	9	33
Ailsa	14	11	10
Utowana	14	11	51
Thistle	14	19	29
Apache	18	17	3

The best daily runs were: Atlantic, 341 miles; Hamburg and Valhalla, 312 miles; Hildegarde, 298 miles; Utowana, 292 miles; Endymion and Thistle, 289 miles; Sunbeam, 282 miles; Fleur de Lys, 281 miles; Apache, 270 miles; Ailsa, 264 miles.

The Atlantic averaged 10.32 knots an hour for the distance, 3,013 miles.

Kelley's book on American Yachts, published in 1884, gives the following list of some American yachts which visited Europe under sail from 1851 to 1874. This list has now been brought up to date.

SAILING CRAFT

Year	*Rig.*	*Name*	*Tonnage*	*Ports*	*Time* d.	h.	m.
1851	Schr.	America	170	N. Y. to Havre	21	..	..
1851	Slp.	Silvie	105	N. Y. to Havre	16	12	..
1855	"	Silvie	105	Southampton to N. Y.	34	..	..
1857	"	Charter Oak	23	N. Y. to Liverpool	..	..	..
1858	"	Chris. Columbus	45	N. Y. to Cowes	45	..	..
1863	Schr.	Gipsey	135	N. Y. to Queenstown	19	..	..
1866	Slp.	Alice	27	Boston to Cowes	19	..	..
1866	Schr.	Henrietta	205	Sandy Hook to Cowes	13	21	55
1866	"	Fleetwing	206	Sandy Hook to Cowes	14	6	10
1866	"	Vesta	201	Sandy Hook to Cowes	14	6	50
1867	"	Vesta	201	Cowes to N. Y.	34	..	..
1867	Slp.	Alice	27	Cowes to Boston	34	..	..
1867	Schr.	Henrietta	205	Cowes to N. Y.	36	..	..
1867	"	Fleetwing	206	Cowes to New Bedford	42	6	..
1868	"	Sappho	274	N. Y. to Cowes	14	..	..
1868	"	Sappho	274	Cowes to N. Y.	32	..	..
1869	"	Sappho	310	N. Y. to Queenstown	12	9	36
1869	"	Dauntless	268	N. Y. to Queenstown	12	17	6
1869	"	Meteor	293	N. Y. to Cowes			
1870	"	Dauntless	268	Queenstown to N. Y.	23	7	..
1870	"	Sappho	310	Cowes to N. Y.	32	..	..
1871	"	Enchantress	253	N. Y. to Gibraltar	..	..	..
1871	"	Enchantress	253	Cowes to Newport	34	..	..
1872	"	Sappho	310	N. Y. to Cowes	18	..	..
1872	"	Dauntless	268	N. Y. to Cowes	25	..	..
1872	"	Dauntless	268	Cowes to N. Y.	35	..	..
1873	"	Enchantress	253	N. Y. to Cowes	22	..	..
1873	"	Faustine	95	N. Y. to Cowes	18	..	..
1874	"	Viking	157	N. Y. to Cowes	30	..	..
1887	"	Zampa		Montauk to the Lizard	15	15	..
1887	"	Coronet		Bay Ridge to Roche's Pt., Ireland	14	19	3
1887	"	Dauntless		Bay Ridge to Roche's Pt., Ireland	16	1	43
1894	Slp.	Vigilant		Sandy Hook to Tory Isl.	14	8	..
1900	Schr.	Endymion		Sandy Hook to Needles	13	20	30
1904	"	Ingomar		Newport to Needles	15	9	27
1905	Bark	Valhalla		Sandy Hook to Needles	14	2	33
1905	Schr.	Endymion		" " " "	14	4	19
1905	"	Hildegarde		" " " "	14	4	33
1905	"	Fleur de Lys		" " " "	14	9	30
1905	Yawl	Ailsa		" " " "	14	11	10
1905	Brgn.	Utowana		" " " "	14	11	51

Year	*Rig.*	*Name*	*Tonnage*	*Ports*	*Time* *d.*	*h.*	*m.*
1905	Schr.	Apache		Sandy Hook to Needles	18	17	3
1905	"	Thistle		" " " "	14	19	29
1905	"	Atlantic		" " " "	12	4	1
1905	"	Hamburg		" " " "	13	2	6
1925	"	Primrose IV		Newport to Lizard	21	15	..
1927	"	Nicanor		Boston to Lizard	20	10	..

Since the adventurous trip of the yacht America to Europe in 1851, which resulted in her glorious victory over the British fleet on the memorable 22nd of August, a number of pleasure craft have sailed the Western ocean back and forth, sometimes in remarkably fast times, and on other occasions in long-drawn-out voyages.

Naturally seafaring men compare the trips of the yachts with those of the sailing ship, to the detriment of the former, losing sight, of course, of the fact that the smaller craft has almost always carried a fore-and-aft rig, while the larger boats had the benefit of large square sails and three or four times as much canvas.

It is nevertheless a fact that the run of the Atlantic in 1905 from Sandy Hook to the Lizard in 12 days, 4 hours, and 1 minute compares favorably with the trip of the ship Adelaide in 1864, in which she accomplished the distance between New York and Liverpool in 12 days and 8 hours, her course being somewhat longer than that taken by the Atlantic.

Apropos of this, and to present a comparison, the following paper is of interest:

AMERICAN SAILING-SHIP RECORDS

By Felix Riesenberg [1]

Much testimony has been offered to show that the New York packet ship Dreadnought never made the run credited to her by some writers—9 days and 17 hours from Sandy Hook Lightship to the Old Head of Kinsale; but there is little need of evidence or argument on that question, for few who know much of ships and the sea have ever believed that the famous Dreadnought sailed that fast.

[1] From *Vignettes of the Sea.* Copyrighted and published by courtesy and permission of Harcourt, Brace and Company.

Who did make the transatlantic, or New York-Liverpool, record, if Captain Samuels didn't? Down-easters are inclined to award the great distinction to the clipper Red Jacket, built at Rockland, Maine, in the fifties. The Red Jacket has a well-attested record of 13 days, 1 hour, and 25 minutes from Sandy Hook Lightship to Liverpool pier head, and it is not recalled that anything faster has been claimed for a sailing vessel.

It is related that the Collins Line steamer, which left New York a day or two before the Red Jacket, arrived in Liverpool one Sunday afternoon and brought the news that the Yankee clipper was just astern. Those were sporting days in the clipper service, and there was as much interest in the performances of fast ships as there now is in any other time records, big money often being wagered on sailing contests.

When the news spread along the Liverpool harbor front people rushed in thousands to the docks, and every pier was black with spectators awaiting the advent of the Yankee sea clipper. Outside the port tugs had offered to tow the clipper, but the ship was going so fast that they couldn't keep the hawsers taut, and so had to give it up. The Red Jacket swept into the Mersey with everything drawing, presenting a spectacle that brought cheers from the multitudes. Then, as tugs came alongside to dock, Capt. Asa Eldridge gave all hands a thrill they had least expected—he ignored the tugs, and, throwing the Red Jacket up into the wind, actually backed her alongside the pier, while the crew took in sail with a celerity that seemed like magic to the spectators. Her highest day's run on this passage was 413 knots!

The Red Jacket was a ship of about 2,000 tons, old measurement; had a very long floor, like a Penobscot River lumberman's bateau, and could carry a tremendous spread and also point high. She carried a figurehead, the image of the Indian chief, Red Jacket, carved from a log of pumpkin pine. She prospered finely in the clipper service, was later sold to English account and sailed in the Australian trade; and at last, after some years of carrying lumber from the St. Lawrence to the United Kingdom, was dismantled and used as a coal hulk at Malta.

In some records the Dreadnought is credited with a run of 13 days

and 8 hours from New York to Liverpool; and it is well authenticated that she ran from Honolulu to New Bedford, 13,170 miles, in 82 days. She was built at Newburyport, Mass., in 1853 by William Currier and James T. Townsend to the order of Governor E. D. Morgan. Captain Samuels, of Brooklyn, was her most famous master. Her fame was as wide as the seas and she soon acquired the name of a racer—"the wild ship of the Atlantic," sailors used to call her. She carried on her foresail a fiery red cross by which she was easily identified at sea. She was 200 feet between perpendiculars, 217 feet on deck, 40 feet beam, 26 feet depth of hold; gross tonnage, 1,413; net, 1,227. Strictly speaking, she was only a half-clipper, but her unusual beam gave her the ability to stand up under a press of sail that would send a full clipper plowing under. She was lost on July 4, 1869, while on a voyage from Liverpool to San Francisco, being piled up on Cape Peñas, to the northeastward of Tierra del Fuego. At that time she was commanded by Captain Mayhew.

The ship Andrew Jackson of Boston sailed from New York to San Francisco in 89 days and 4 hours; the Northern Light to Boston home from San Francisco in 76 days and 5 hours; the North Wind of New York from England to Port Philip Head, Australia, 12,500 miles, in 76 days; the Young America of New York from Liverpool to San Francisco, 13,800 miles in 99 days; the Euterpe of Rockland, Maine, from New York to Calcutta, 12,500 miles, in 78 days; the Richard Busteed of Boston from Sydney, N. S. W., to Calcutta, 5,800 miles, in 42 days; and the bark Ocean Telegraph of Boston home from Callao, 9,970 miles, in 58 days.

In 1851 the Sovereign of the Seas sailed from New York to San Francisco in 102 days, 14 days of which time she spent lying off Valparaiso, she having been partially dismasted in a gale. After discharging at San Francisco she sailed to Honolulu and from that port ran to New York in 88 days without starting a tack. In ten consecutive days she made 3,300 miles. From New York she sailed for Liverpool, was becalmed on the Banks of Newfoundland, and when she got a chance ran from the Banks to the Mersey in 5½ days, the whole passage being made in 13 days and 19 hours. Among her best single day's runs are recorded 419 and 437 miles, on a passage from New York to San Francisco.

The Natchez, another famous clipper, once made the run from Canton to New York in 78 days. The Samuel Russell of Boston in 1854 made 318 miles in one day, homeward bound from Whampoa. In 30 consecutive days she covered 6,722 miles, or nearly half the distance from New York to China. In 1852–53 the Flying Dutchman of New York went to San Francisco, discharged, loaded and got back to New York, a round voyage of 27,220 miles, in 201 days, wharf to wharf. She ran from the Golden Gate to the Horn, 6,380 miles, in 35 days.

The Lightning of Boston in 1854 crossed to Liverpool in less than 14 days, and after being sold for English account and rigged as a bark, she sailed from Melbourne to Liverpool, 12,190 miles, in 64 days. The Comet of New York sailed from Liverpool to Hongkong, 13,040 miles, in 89 days; the Mary Whittredge of Baltimore from Cape Henry to Liverpool, 3,400 miles, in 13 days and 7 hours; and the bark Dawn of New York from Buenos Aires to Sandy Hook, 6,010 miles, in 36 days. The Nabob of Boston ran from New York to Rangoon in 75 days. It is related of that voyage that the Nabob carried away seventy-five stuns'ls, and that when all her stuns'l booms had gone by the board the Old Man began using long-boat oars.

The Flying Cloud, an earlier racer than any of those named, is credited with a day's run of 433½ miles, this record having been made on a voyage from New York to San Francisco, covering 13,610 miles in 89 days and 18 hours. The records are: Ship Andrew Jackson, New York to San Francisco, 89 days, 4 hours; Ship Comet, San Francisco to New York, 76 days—the faster passages being to the eastward around Cape Horn.

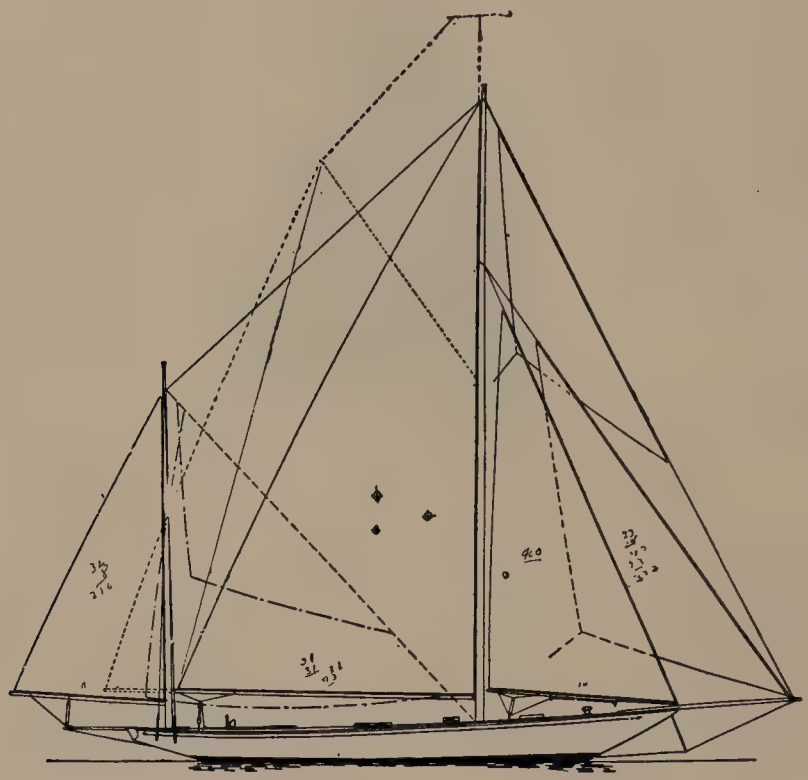
NEW YORK FORTIES AND FIFTIES

By Lewis Kleinhans

"UNDER a cloudy sky and in water smooth as glass seven of the nine new 50-foot one-design sloop yachts built last winter for members of the New York Yacht Club by the Herreshoffs sailed their maiden race yesterday on Long Island Sound over a twelve-mile triangular course. The Iroquois II, owned by Ralph N. Ellis, proved the winner, with H. P. Whitney's Barbara second. There was scarcely wind enough from the southwest to give the yachts steerage way when the Regatta Committee, having waited more than an hour for a breeze, gave the preparatory signal from Vice-Commodore George F. Baker, Jr.'s, steam yacht Viking."—*New York Times*, Sunday, May 25, 1913.

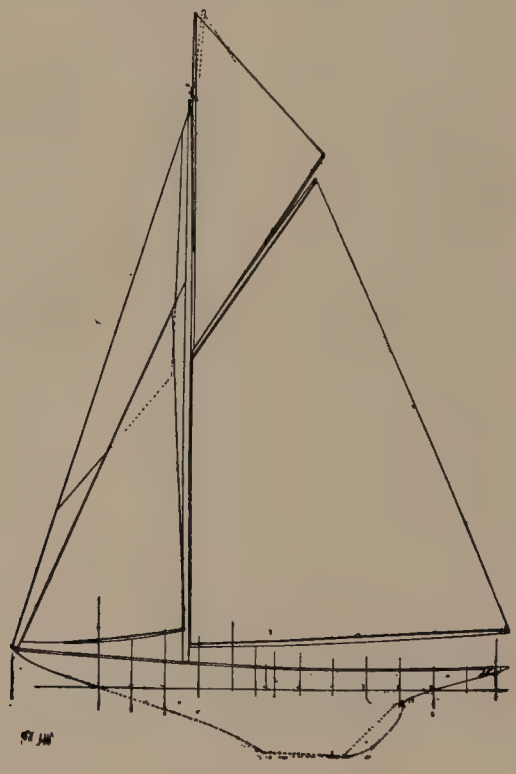
In my opinion this event, or more properly, the building of the class of boats that made this event possible, marked the apex of a double tendency in the New York Yacht Club toward larger boats which should at the same time be members of a one-design class, which had its inception probably as far back as 1891 or 1892. These two seasons, together with that of 1890, measured the reign of the famous Minerva, the fastest of all the first class of 40-footers. Yachts were built and rebuilt in vain attempts to defeat her and her marvellous skipper, Charlie Barr, but this was never done. These repeated efforts failing, yachtsmen turned their attention toward bigger boats, and the 46-foot class was the first result.

Coming on through to 1900, we find the class of 70-footers,—



SAIL PLAN—NEW YORK FORTY

Dotted lines show original sloop sail; solid lines—yawl rig that was used in Bermuda race. Designed by Herreshoff.



SAIL PLAN—NEW YORK FORTY

huge sloops, 106 feet overall,—made up of Mingola, Virginia, Yankee, and Rainbow; and in 1907 still another class, Winsome, Cornelius Vanderbilt's Aurora, and Istalena, belonging to George M. Pynchon, 62 feet, 8 inches waterline.

At this point, however, another influence seems to have made itself felt, that of economic pressure. These boats were too expensive both to build and to keep up—Henry L. Maxwell has estimated this figure at $3,000 per season per man of crew required—to be available to the man of average or even considerably above the average means. Large classes of them were therefore impossible. Yachting at the same time was rapidly expanding. It was no longer the exclusive hobby of a comparatively small number of tremendously wealthy men, willing and able to employ professional captains and professional crews, but was becoming more and more the pastime of many others, primarily interested in sailing their own boats. The nine fifties, built in 1913, were the first outgrowth of this situation, combined with an attempt to strike a middle course between the classes mentioned above, on the one hand, and the thirties and the Class P sloops on the other. From this point to the building of the forties, also by the Herreshoffs, in 1916, is just one more step in the direction indicated.

The forties were built for cruising as well as for racing, and in spite of the comment of a critic at the time of their construction, who claimed that Herreshoff had taken the Cup Defender Resolute as his model (*New York Times*, Sunday, May 14, 1916), cannot compare with their older sisters in appearance. The fifty is every inch the greyhound, while the forty, due to its high freeboard, made necessary by the unusual amount of headroom in its cabin, presents a somewhat dumpy appearance. To quote a description of them, written in the middle of their first season: "In the new 40-footers Herreshoff has probably reached the limit of the type which he had been developing, starting with the 57-footers nine years ago. The whole character of all his late boats might be likened to a skipjack with the bilges rounded. They all have the same straight floor, with considerable dead-rise, which is carried the full length of the boat, and at a certain angle forward shows a decided bulge, carried right up to the deck, where the floor meets the side of the

Photo by Levick

NEW YORK FIFTY-FOOT CLASS

These greyhounds of the New York racing fleet are handled and jockied at close quarters like fifteen-foot boats. This picture apparently depicts an impending disaster or at least a foul.

boat. So far as has been observed, their only fault seems to be a lack of draught, in that when heeled down to the deck, instead of climbing out to windward, they slide off to leeward. It is probably due as much as anything to the very deep V-section which, when

Photo by Levick

NEW YORK FORTY-FOOT YACHT KNOCKED DOWN TO A STRONG WIND
The action of the rough water along the leeward side is of special interest

heeled well over, offers the least resistance to side pressure. Also the very high rig they carry causes them to take a greater angle of heel than would be the case with a lower one."—(*Rudder*, July, 1916, Volume XXXII, No. 7, p. 318.)

Both originally carried the same sails—mainsail, topsail, jib, jib topsail, and on occasion a balloon and spinnaker,—and both, more-

over, have what Caspar Whitney has called "that Herreshoff characteristic of passing unperturbed through agitated waters" (*Outing*, August, 1901, Volume 38, pp. 579-80), to such an extent that I have been told that a forty has never been seen reefed.

Photo by Levick

YACHT ANDIAMO

New York fifty-foot class close hauled on the port tack. The Marconi rig necessitates a mast of tremendous height

Most of the fifties, however, have now been re-rigged as schooners or yawls, and those that are left have successfully changed their original boom-and-gaff rig for the Marconi and race in Class M, made up of boats rating 46 feet racing length according to the International Rule. Experiments with the Marconi rig on the

TYPHOON, ONE OF THE NEW YORK FORTIES

forties have not been successful, probably because of the fact that the extra sail heels them too much in heavy winds, while in light winds a topsail answers practically the same purpose as the Marconi. This difference in action is, I think, at least partially explained by the fact that the forty, though ten feet shorter on the waterline, has almost exactly the same beam as the fifty.

Both classes are, as mentioned above, excellent heavy weather boats, but the fifty is consistently faster in any wind, the forties at times having difficulty in saving their time even against the much smaller thirties and Class P sloops. The main attribute of the forties seems to be that of possessing an ability to withstand all kinds of rough handling, both by men and weather. R. N. Bavier won the Bermuda race in 1924 with Memory, carrying a yawl rig; and there is always the story, now two seasons old, of Mike Cassidy, pushed hard by the Rowdy while making for a mark off Brenton's Reef Lightship, throwing Banshee into a flying jibe with every inch drawing,—and bringing her out of it all standing!

The past few years have seen racing in these two classes decidedly on the down grade. Growing interest in the Star and 6-metre classes has diminished interest in the older boats to such an extent that 1926 was the last season for the fifties as a class; and that of 1927, just passed, saw only two forties, Mistral and Typhoon, sailing at all consistently. Even these two competed in an insufficient number of races to qualify for a class championship, and since the close of the season, Typhoon has been sold out of the club. William B. Bell, present owner of Mistral, also owns the Shawara, and is holding her for a buyer who will sail her in the class; but the final disposition, if the present general lack of interest persists, is problematical.

It has been said "with the advent of Mr. Herreshoff into the designing field began a system of secrecy which has since made it impossible to get all the measurements of the competing yachts."—(*Outing*, August, 1901, Vol. 38, p. 511.) Comparative measurements that are available, follow: (see on page 238).

Photo by Levick

NEW YORK FORTY-FOOTERS SCAMPERING AWAY FROM A BAD SQUALL
It is to be hoped the halyards were in good shape and well coiled

	L. O. A.	*L. W. L.*	*Beam*	*Depth of Hold*	*Draught*
Forty	59′	40′	14′5″	8′7″	8′
Fifty	72′	50′	14′6″	9′3″	9′9″

FIFTIES

Original Name	*Original Owner*	*Present Name*	*Present Owner*
Acushla	G. M. Heckscher Huntington, L. I.	Revery	L. V. Lockwood Greenwich, Conn.
	(Changed from sloop to auxiliary yawl in 1924.)		
Iroquois II	Ralph Ellis New York City	Chiora	Chas. L. Harding Marblehead, Mass.
Grayling	J. P. Morgan New York City	Ibis	Clinton H. Crane New York City
Carolina	Pembroke Jones New York City	Carolina	Geo. Nichols New York City
Spartan	Edmund Randolph New York City	Spartan	H. W. Hanan New York City
Ventura	George F. Baker, Jr. New York City	Venture	Wm. Greenough Newport, R. I.
(Became the Istalena. Name was then changed to Venture. Changed to auxiliary schooner in 1923.)			
Barbara	H. P. Whitney New York City	Barbara	H. L. Maxwell Larchmont, N. Y.
	(Changed to auxiliary sloop in 1924.)		
Pleione	H. L. Maxwell H. W. Maxwell Larchmont, N. Y.	Pleione	Joseph V. Santrey Marblehead, Mass.
(Built Peerless for H. L. Maxwell and H. W. Maxwell, but sold before her first race to Chester C. Rumrill and E. T. Irvin, of New York City, who renamed her Pleione, and sailed her in the New York Yacht Club Spring Cup race in May, 1913. Is now auxiliary yawl.)			
Samuri	W. Earl Dodge New York City	Andiamo	W. K. Shaw Boston, Mass.

FORTIES

Black Duck	Arthur K. Bourne New York City	Memory	Bancroft C. Davis Edgartown, Mass.
(Changed to auxiliary yawl 1923. Sailed to Bermuda in 1924 by R. N. Bavier, the longest trip ever taken by one of this class.)			
Dolly Bowen	A. S. Cochran New York City	Cockatoo	Amory Coolidge Marblehead, Mass.

FORTIES—*Continued*

Original Name	*Original Owner*	*Present Name*	*Present Owner*
Jessica	Wilson Marshall Bridgeport, Conn.	Jessica	E. D. Morgan, Jr. New York City
(Has been called Sally Ann, but is now the Jessica again. Changed to Marconi rig auxiliary by present owner.)			
Katherine	Arthur F. Luke Boston, Mass.	Katherine	Thos. H. Shepard Marblehead, Mass.
Maisie	Morton F. Plant New London, Conn. (Has also been called Monsoon.)	Typhoon	Mr. Leslie Boston, Mass.
Mistral	Geo. M. Pynchon Greenwich, Conn.	Mistral	Wm. B. Bell New York City
Pamparo	Dr. Jas. Bishop New York City	Pampero	Chandler Hovey Marblehead, Mass.
Pauline	Oliver G. Jennings New York City	Banshee	Henry L. Maxwell Larchmont, N. Y.
Rowdy	Holland S. Duell Milton Point, N. Y.	Rowdy	Holland S. Duell Milton Point, N. Y.
Shawara	Harold Wesson Boston, Mass.	Shawara	Wm. B. Bell New York City
Squaw	John S. Lawrence Marblehead, Mass.	Squaw	Frederic R. Kellogg Morristown, N. J.
Zilph	Edgar Palmer New York City (Sold to J. E. Hayes before her first race.)	Marjee	Ed. W. Goss Madison, Conn.
Marilee	Ed. I. Cudahy Marion, Mass. (Built by Herreshoff in 1926.)	Marilee	Ed. I. Cudahy Marion, Mass.

Black Duck, Dolly Bowen, Katherine, Maisie, Squaw, and Zilph have been sold out of the Club.

RULES TO GOVERN THE ONE-DESIGN 50-FOOTERS WHEN SAILING AS A ONE-DESIGN CLASS

All races to be sailed without time allowance and under the restrictions of trim and equipment as specified for Racing Trim in Rule V of the N. Y. Y. C. Racing Rules, except hereinafter provided:

OUTFIT

A cruising equipment of deck, cabin, galley, and forecastle fixture shall be carried and kept in place, except davits, accommodation ladder, spare and extra sails, and any further equipment of anchors and cables above those mandatory under Rule V, none of which need be carried.

The bow anchor provided shall not be stowed aft of the forecastle, but the anchor chain may be carried where desired.

The carrying of a 10-foot or other boat on deck or elsewhere shall be optional.

Racing hatches will be allowed on the forehatch.

Up to 1,000 pounds of lead may be carried wherever desired.

CREW

The rules of the Club shall apply as to the total number of crew but the total of paid hands of any description shall be limited to six.

The helmsman when starting, finishing, rounding marks, and in windward work shall be a Corinthian.

HAULING OUT

Yachts shall not be hauled out, put on the beach, or in drydock, more than once in three weeks, and shall not remain out of water more than three days at any allowed time of hauling out or docking. In case of an accident the Committee may waive this rule.

SAILS

Yachts shall be allowed one new full set of sails during the season, and must race with that set or with any set which was in use last year. In addition, yachts shall be allowed to replace any light sails which, in the opinion of the Committee, may be damaged through accident beyond serviceable repair.

Balloon staysails shall be barred except on the N. Y. Y. C. cruise.

A 2-foot black band shall be painted *around* the mast, the lower end of which shall not be more than 45 feet, 3 inches above the deck and above this mark the throat cringle of the mainsail shall not be hoisted.

Length of spar shall not exceed:

Boom 48′ (outboard end to after side of mast).
Gaff, 32′ (outboard end to face of clapper or jaw).
Spinnaker boom, 25′4″ (end to centre of socket pintle).
Club topsail yard, 35′.
Club topsail club, 19′.
Battens: the N. Y. Y. C. rule shall apply.

The size of the sails shall not be limited, but the length of boom, gaff, spinnaker book, club topsail sticks, hoist of mainsail, the distance of topsail, jib, jib-topsail, and spinnaker halyard blocks above the deck shall not be increased.

Ballast and spars shall not be altered in any way except by mutual consent and with the ratification of the Committee.

Rules to Govern the One-design Class of New York Yacht Club 40-Footers When Sailing Solely as a One-design Class

All races to be sailed without time allowance and under the restrictions of trim and equipment as specified for Racing Trim in Rule V of the N. Y. Y. C. Racing Rules, except as hereinafter provided.

OUTFIT

A cruising equipment of deck, cabin, galley, and forecastle fixtures shall be carried and kept in place. Space and extra sails, and any further equipment of anchors and cables, above those mandatory under Rule V, need not be carried. The carrying of a 10-foot or any other boat on deck or elsewhere shall be optional.

The bow anchor provided shall not be stowed abaft the forecastle, but the anchor chain must be carried in chain locker.

The regular outfit shall be carried at all times, including storm sails or their equivalent.

CREW

The maximum professional crew shall be limited to four, but two additional paid hands may be shipped for any race.

The helmsman shall be a Corinthian at all times, except on runs and reaches.

HAULING OUT

Yachts shall not be hauled out, put on the beach or in drydock after May 30, more than five times in a season; the total number of days out of water being limited to 15 days.

SAILS

Yachts shall be allowed to use only one new set of sails, in any one season, but shall be allowed to replace any sails which, in the opinion of the Committee, may be damaged through accident beyond serviceable repair.

Lightweight jibs shall not be carried. Jibs shall have a single jib sheet, and shall have become fastened to bowsprit.

Only two sizes of sails shall be carried on the jib topsail stay:

(a) The regular baby jib topsail.

(b) A big ballooner on cruising runs only.

(c) A reaching high cut ballooner; this sail to be identical in shape and size for all the yachts.

Length of spars shall not exceed:

Boom, 39′4″ (outboard end to after side of mast).
Gaff, 28′2″ (outboard end to face of clapper or saddle).
Spinnaker boom, 26′10″ (end to centre of jaw).
Sprit topsail yard, 31′. The Scotchman shall not be moved radically.
Battens. The. N. Y. Y C. rule shall apply.

Hoist shall not exceed the original length, according to Herreshoff certified sail-plan. Spinnaker boom, when in use, shall be carried against the mast.

Fixed ballast and spars shall not be altered in any way except by unanimous consent of owners and with the ratification of the Committee.

MEASUREMENT

Yachts shall be measured and the Measurer's certificate thereof shall be lodged with the Committee, if such action be required at any time by the Committee.

Prize money to professionals shall not exceed the following:

$5 for first place;

$3 for second place when four (4) or more start;
$2 for third place when five (5) or more start.

Questions arising under these rules shall be decided by the Committee elected by the owners for the season and their decision shall be final.

These rules shall be printed and a copy carried on each boat and one copy filed with the Chairman of the Race Committee of the New York Yacht Club.

EDITOR'S NOTE.—Mr. Kleinhans is a member of the younger school of yachtsmen. Most of his sailing has been the racing of boats of small types, but despite his lack of personal experience in sailing large boats, he shows a complete knowledge of his subject and the paper is the result of much research work.

It is with regret that we all witness the passing of such magnificent boats as the New York forties and fifties. It is, however, not surprising that the smaller classes are eliminating the larger ones—first, because of expense; second, because there is more sport in classes not confined to one design, unless rigid economy is necessary; and third, because one soon gets tired of racing the same boat, with the accompanying constant purchase of new models and discarding of old ones. I regret not being able to reproduce the drawings of these boats and the specifications on which they were built. Some day, I hope the yachting world will be benefited by the publication of the designs and drawings of all the famous yachts from the board and shop of the Herreshoffs.

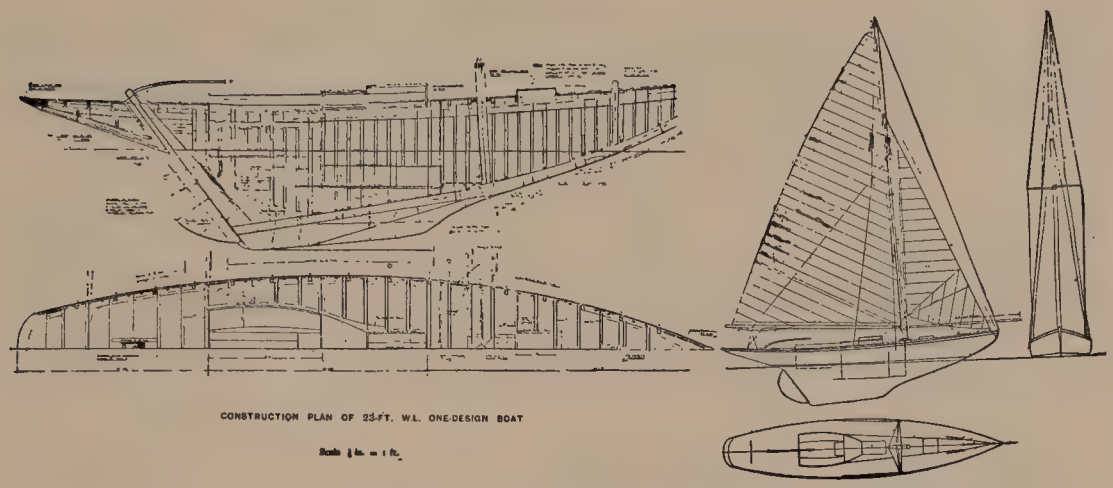
THE WEST SOLENT RESTRICTED CLASS YACHTS

By Maurice Griffiths

THE reason why more cruising yachtsmen do not race is that the conditions governing yacht racing and cruising, respectively, require two entirely different types of vessel, neither of them entirely suitable for the other phase of the sport. Your racing yacht must be, above all things, fast. If you demand speed you must sacrifice comfort, steadiness, even to a certain extent seaworthiness. Your racer must be sensitive and quick on the helm, so that the many manœuvres of the regatta course can be made without delay, and so long as your racing yacht can sail as fast as, or faster than, all the other competitors round the regatta course, it does not matter a cent if she leaks, drenches her crew or tires them out with her violent movements.

Your cruising yacht, on the other hand, is essentially a comfortable, safe vessel which is able to face bad weather offshore if need be; she need not necessarily be fast, for speed in a yacht is very uncomfortable, if not actually dangerous, in a rough sea. Comfort, then, and ability to stay at sea are the chief considerations of the true cruising yacht.

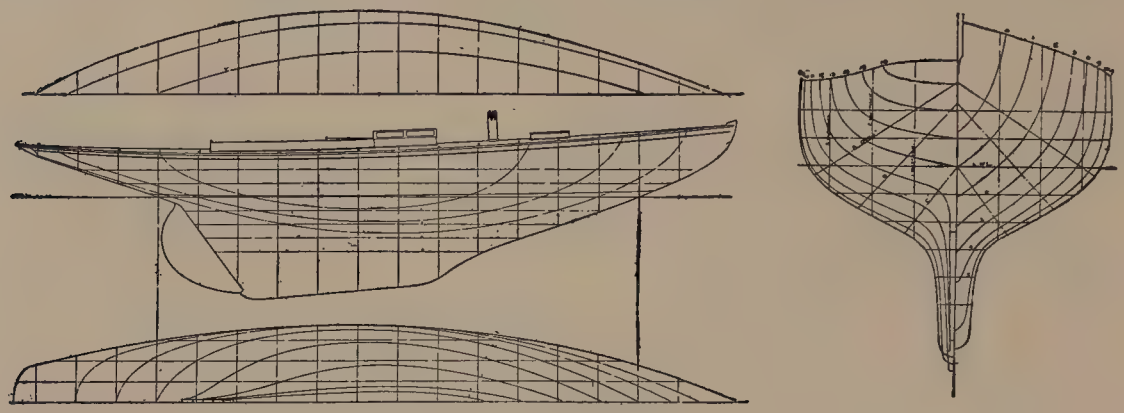
Then, how on earth, you may well ask, is a fellow going to unite all these desirable qualities in one single boat without making her quite useless for both racing and cruising? The ideal racing cruiser has occupied yachtsmen's minds quite as much as the "ideal woman," and it has been equally elusive and disillusioning. Hundreds of designs have been tried and even classes of "racing-cruisers" formed, but after a time the keen racing fans have said of them, "They are too slow for really sporty racing"; and the cruising enthusiasts have declared bitterly, "Oh, they're only racing yachts really, too lightly built for honest cruising; too fast, wet, and darned uncomfortable!" So class after class has been disbanded and the poor outcast boats have never been liked by either class of yachtsman.



SAIL PLAN AND ARRANGEMENT PLAN—WEST SOLENT CLASS
Designed by Berthon Boat Co.

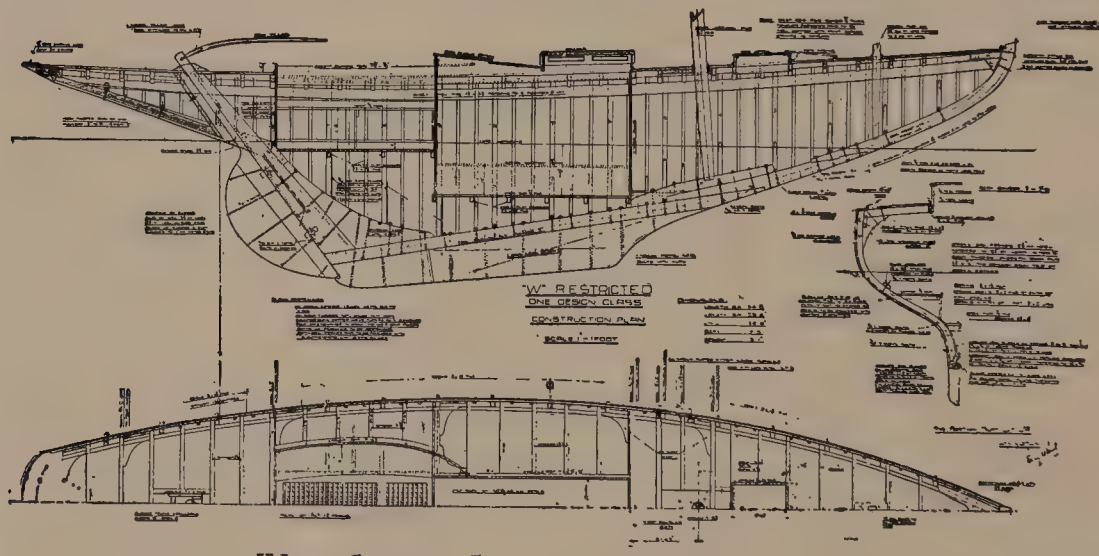
SAIL PLAN—WEST SOLENT CLASS
Designed by Berthon Boat Co.

On the Solent, however, where many regattas and races take place in moderately sheltered waters within a radius of twenty miles or so, there appeared to be a very good opportunity to try a



LINES—WEST SOLENT CLASS
Designed by Berthon Boat Co.

new class of small yachts which would not only give good, high-class racing, but could also make passages round the coast from regatta to regatta and, if required, could be used by their owners



WEST SOLENT CLASS—CONSTRUCTION PLAN

as cruisers during their summer holidays. The old Solent Sunbeams, a very popular one-design class a few years back, were becoming a little tired looking and the little boats—they were only

half-decked, 17 feet, 6 inches on the waterline and 6 feet beam and 26 feet, 5 inches overall, with 300 square feet of canvas—were found to be not really "man enough" for the open Solent when there was a fresh sou'wester blowing against a 3½ knot spring ebb.

Many owners, too, were not financially able to keep a "large yacht for cruising" and a small one for racing only. One moderately small yacht would have to suffice for both purposes. A new and really good class of racing cruisers, which would be within the means of the majority of racing men, was definitely demanded.

Mr. H. G. May, a clever designer of Lymington, Hampshire, rose to the occasion, and towards the end of 1923 produced a design which even the critics had to admit was about as near perfect for the purpose as they could wish. A great amount of care and forethought was put into the new design; for remember, not only had the resulting boat to be a successful racer, she must also be a real cruiser and at the same time the cost of building was strictly limited.

The accompanying plans show the result and a study of them will reveal the care with which this design was produced to meet the difficult requirements. Almost at once members of the Lymington Yacht Club ordered five of these boats to be built for the season of 1924, and these first boats formed a nucleus of a class of Lymington Racing Cruisers which later became known as the West Solent Restricted Class.

They are not very big boats, for they are only 23 feet on the waterline, with a length overall of 34 feet, 6 inches, but they are sturdier in every way than the average pure racing yacht of their dimensions; and they have been given a healthy beam of 7 feet, 6 inches, with a moderate draught of 5 feet, and a depth of hull of 5.1 feet. Comparing them with one of the International 6-metre boats, it will be seen that they are not so very much larger, for the West Solent Restricted Class yacht is only 15 inches longer on the waterline and some 9 inches more beam. But they have greater depth of hull, they are fuller bodied and more powerful in every way, and their freeboard is considerably more in proportion than in an International class boat.

Photo by Beken

CYRILLA

A fine example of the West Solent class, originally built in England for Barklie Henry of Philadelphia, U. S. A.

So far as construction goes, it need only be said that these yachts are built entirely in accordance with Lloyd's requirements for cruising yachts of these dimensions, and there is therefore nothing "light" or flimsy about them, with one possible exception, to which I will refer presently. Although they are only larger than an average 6-metre by a matter of a few inches, these boats have quite good room below decks, and in more than one of them I have found the cabin extremely well fitted up, with white enamel and polished mahogany fittings, toilet compartment forward, two Pullman berths in the cabin (which has five feet headroom under the skylight), a folding cot berth in the fo'c's'le, and a cooking locker against the mast. Yet the price of one of these boats, fitted up plainly below with pine berth lockers for day cruising, but with all necessary gear for racing, is quite moderate, being in the region of £550. Of course, interior fittings according to the owner's taste can be added at an increased cost, and the cockpit, which is 5 feet, 6 inches long and about 4 feet wide, can be made self-draining if desired. If you compare this price with, say, that of an average 6-metre, which is in the neighborhood of £1,200 to £1,500, and remember that the International boat is almost useless for any form of cruising, it is easy to understand why these West Solent Restricted yachts gained rapid popularity.

The total sail-area is only 567 square feet and the rules of the class allow any rig to be used. Needless to say, all the boats are Bermuda (or Marconi) rigged, with a foresail running on a forestay set up on the stemhead; which means that they are not troubled with bowsprits One boat, it is true, tried the orthodox gaff mainsail, but she could not compete with any success against the Bermuda sails, and has since followed suit. Even with this very moderate sail-area these little ships are extremely fast in light airs and a delight to handle, although they are shown to their advantage in fresh breezes. Then they stand up to their canvas rather better than can the average "six," and racing in them is great sport. They are very weatherly little boats, too, and are a marked improvement on the older and smaller Sunbeams, which they have replaced. Their buoyant bows do not dive into the short Solent "chop" that gets up with wind against the tide so much as in

other boats, and their hulls and rigs are so beautifully balanced that sailing them in almost any weather is a real pleasure.

The success of the first batch of boats which raced on the Solent during the season of 1924 soon spread. Arrow, Dinah, Fenella, Pandora, and Calypso were the pioneers, and of these Fenella held the record. Then in September of that year the owner of Pandora decided to try his boat as a cruiser and wended his way successfully round to the East Coast, with the intention of taking part in the races at Burnham-on-Crouch during Burnham Week.

This was a very good cruise for one of these boats to undertake at the end of the season, for I understand that the weather was none too good and Pandora had to carry on through some bad squalls off the South Foreland, where a bad sea soon gets up. The miles were sailed without mishap and the boat's ability to "stand up to it" was proved.

Burnham is the chief "yachting" port in the Thames Estuary and boasts a fleet of some 600 yachts of all sizes, from 20 to 100 feet, and with its three yacht clubs—the Crouch Yacht Club, Royal Corinthian, and Royal Burnham—puts up a good racing season.

Pandora raced in the Handicap for yachts under 10 tons, Thames measurement (these West Solent Restricted boats measure 6.5 tons T. M.), and surprised everybody by carrying off four first and two second prizes out of six races. Her performance created such a stir amongst the local yachtsmen that I am told several of them came out of their clubhouses and sat on the steps in order to see this new yacht, although it was raining at the time.

The Burnham Yacht Club (now the Royal Burnham) decided to adopt the class in place of the old ex-24-footers, which had become somewhat impoverished and were never very attractive boats. There are now eight of these West Solent class boats at Burnham-on-Crouch and they form a very keen racing class known as the Burnham Restricted Class.

In the following year, 1925, five of these little ships were built at the Lymington Shipyard and shipped to the Argentine for various members of the Yacht Club Argentino. These five boats were actually built under the supervision of a Lloyd's surveyor and

Photo by Beken

Apparently, judging by the easy positions of the crew these West Solent class boats are light, on the helm, before the wind. Which boat has the best position?

fully classed at Lloyd's before being shipped onto the steamer. I hear that they have provided excellent sport and there is a rumor that their number may be added to ere long.

In the meantime most of the original boats have changed hands, and the five of 1924 are now known as Dart, Suvretta, Squirrel, Pandora (her name remains unchanged), and Dilkusha, respectively. To these have been added Cyrilla, Persephone, Janetta, Harkaway, and Vivacious. All of these race more or less regularly at the Solent regattas and at Lymington, and excellent sport they produce.

Whether this growing class will ever be adopted in America remains to be seen, but already two prominent American owners have figured in the class. Mr. Barklie Henry, of Rosemont, Pa., built Cyrilla; and Harkaway is owned by Mr. J. J. Morgan, of Morgan, Grenfell & Company. With the carefully constructed moulds and templates with which these yachts are built, batches of them could be laid down and completed in a short time by the builders in the winter months.

"Now, look here," says the hard-bitten cruising man, "this is all very well. We've heard these boats are good racers, but the real and only sane point is: Are they good cruisers?" To say, "Oh, yes, most decidedly, my dear sir!" would stir what I call my conscience, for I am also a somewhat hard-bitten cruising man and not only a racing fan. Whether these little boats could be called successful cruisers depends on exactly what you want to do in them. Personally, I would not care to spend one month aboard one of these boats at sea, meeting all kinds of weather. Although their scantlings and general weight of construction leave nothing to be desired even by a cruising man, it stands to reason that the actual *shape* of the hull was designed more with an eye to a fast boat than a comfortable one in a sea way; and I venture to express the opinion that, although these little vessels may be quite satisfactory for port to port passages along the coast of ten, fifteen, or perhaps twenty hours' duration, they are too quick on their helm, too buoyant forward and not roomy enough below, to be real seagoing cruisers which can "stick it" for days on end. And that, when all is said and done, is what the genuine cruising man demands—a boat

which will look after him and successfully meet most kinds of weather he is likely to run into during an average summer cruise.

But in order to have a *popular* racing class which could also be used as deep sea cruisers, you would have to build much larger yachts, and then the majority of keen racing and cruising men would not be able to afford it. With these West Solent boats you have almost the keenness and sensitiveness of racing with the 6- or 8-metre classes; yet at the same time you have a boat under you which can be used for coastal cruising in reasonable weather without much discomfort. No paid hand is required for racing purposes, if you have a capable friend to work the sheets for you; and the expenses of racing in this class are, therefore, very reasonable indeed. On a good hard sailing day these boats give one a greater sense of power than the 6-metres, and if it has been a wet "gruelling," when you get back to your moorings you have a fairly cosy little cabin in which to change and get something hot to eat or drink.

Of course, in comparing these boats with the International 6-metres it must be realized that the latter are naturally faster to windward than the West Solent Restricted boats; and in light airs, owing to their lighter displacement and much greater sail-area in proportion, they are considerably faster. But I have never tried one of these cabin boats against a "Six" in a really hard blow in a thresh to windward or even on a reach. I rather think the West Solent boat would give a very good account of herself. They are certainly powerful little vessels and they have a very good turn of speed.

I was asked to state in what way these boats could be improved. When one is given an obviously good thing it is a difficult and unenviable (not to say personally dangerous), task to find a fault and suggest a remedy. Although, for their purpose, the design of these boats could hardly be improved upon, it has always seemed to me that the position in which the mast is stepped is a source of weakness. In the early boats I have been told this led to a great deal of trouble, and most of the class at Burnham-on-Crouch appear to leak somewhat badly after a heavy beat to windward against the short, steep seas that are inseparable from the Crouch and its

Photo by Beken

This picture of West Solent boats shows them lined up like soldiers on parade, and presents a fine study in perspective

strong tides. The stepping of the mast has been improved, but even now it seems to me that it would have been better to have carried the lead keel further forward, or stepped the mast further aft, so that much of its dead weight might be taken by the keel itself and not through an extension of the wood keel. This would, of course, have entailed some desperate alterations to the design itself, and could not be carried out now. But the fact remains that these boats are inclined to strain at the heel of the mast for a reason which should never be found in a cruising yacht.

Considering that cruising and racing each requires an entirely different type of yacht, the manner in which these Lymington racing cruisers meet the demands of both sides is very much to their credit, and to the credit of their designer and builders. As racing yachts they could scarcely be improved upon, without becoming highly expensive machines, while as cruisers they are *good enough* for what is required of them, namely, the ability to sail from port to port along the coast with due respect to the weather.

But you can't have it all ways, and the *perfect* racing cruiser isn't just going to be built on this earth.

EDITOR'S NOTE.—The yachting world is always interested in all types of yachts that are created, in an endeavor to solve the almost impossible riddle of how to design a boat that will be equally good for cruising and racing. The West Solent class seems to have satisfied Mr. Griffiths and the many owners who are evincing their judgment by building additions to the present fleet. After looking carefully over the plans and photographs, the thought occurs to me that there are many types of boats built for this same purpose, with better accommodations and less waste room. This is particularly noticeable in the funny little penthouse for a cabin, the miniature cockpit, and the great expanse of fore-and-aft deck. It is interesting to note that two prominent American yachtsmen are represented in this class.

"BOEIEN"

YACHTS OF THE NETHERLANDS

By Gerald T. White

THERE is a theory that the character of a people is reflected, to a great extent, in the sort of yachts they use. There is a sound basis for such a hypothesis, but none can deny that geographical surroundings are of more importance in the moulding of a typical yacht class for a given locality.

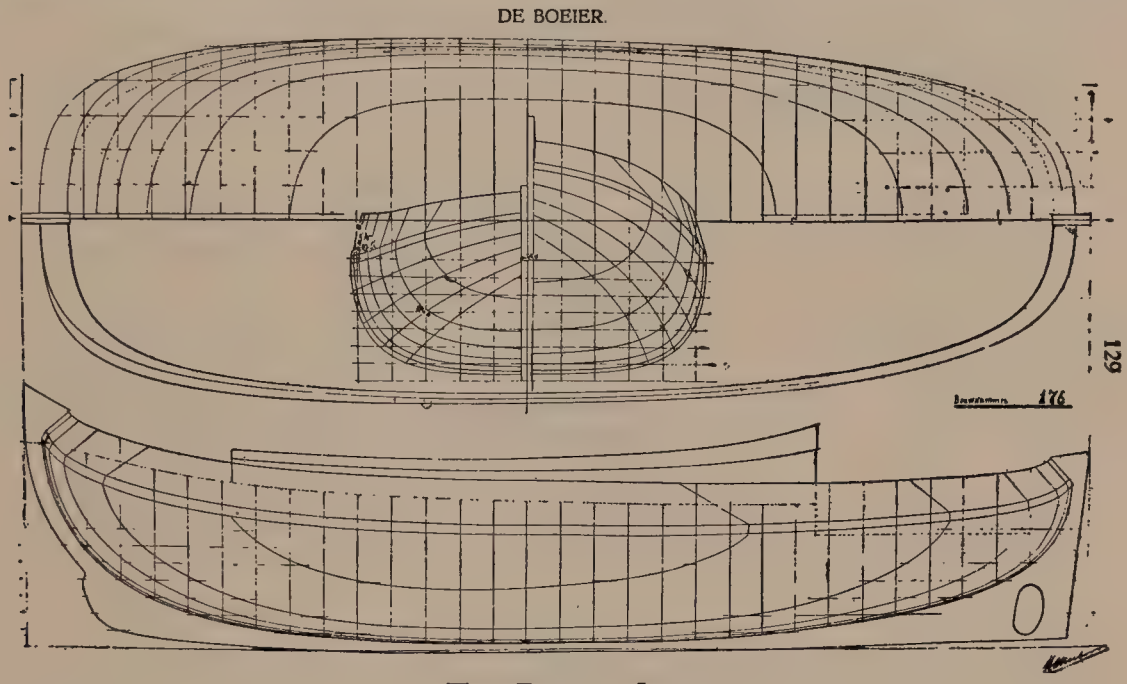
Working on the first part of the theory, we discover many interesting verifications. We find the high-strung Frenchman and the Italian paying marked attention to the production of futuristic hydroplanes, hydrogliders, and similar craft designed to cover the greatest amount of distance in the shortest time. We find the English enthusiast going in quite contentedly for single-handed cruising. Does not this coincide with the Britisher's worldwide reputation for making himself at home wherever he may be?

In America we have every sort of craft: heavy cruisers, racing boats and everything in between. But then we are a cosmopolitan nation, made up of people from every land and clime.

If we tackle the second theory we discover that yachting in France is not so much a coastal proposition as it is a consideration of craft for river work. The coast of France, barring the Mediterranean, is rather boisterous for pleasure boating. The Englishman naturally turns to a cruiser, because most of his work must be done in the open waters about the British Isles. In America we have every sort of waterway and our craft must be of every sort

to take advantage of our yachting grounds. From this we may claim that both theories are sound. Racial characteristics and geographical considerations both determine the size and type of pleasure craft.

In considering the yachts of Holland, we find further proof of our statements. The Hollander is a staid, stolid citizen and he turns to a husky long-lived boat for his water-borne commerce and his pleasure. The waterways of Holland are shallow, winding, and



THE BOEIER—LINES

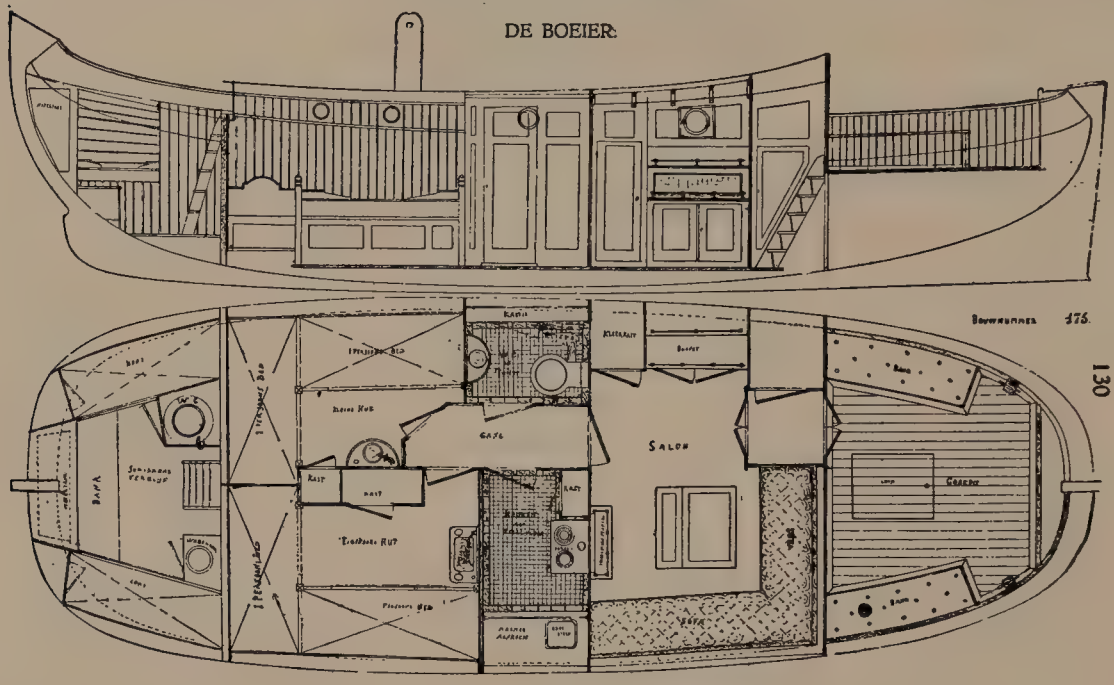
Here are the lines of a typical boeier. Note the bold curves in every direction. In spite of the full bow these boats are very satisfactory in rough water

often narrow, but at the mouths of the canals and rivers there are wide bays, locally called "zees."

The Hollander's yacht must have shoal draught in order to navigate the waterways. It must be strong to stand the battering of the only too frequent grounding. It must be seaworthy to withstand the short, sharp chop of the Zuider Zee and the other large, shoal expanses. It must be economical to build and maintain, for the Hollander has no spendthrift reputation to live up to. Economy of upkeep means economy of crew, and the Dutchman has evolved

a boat which can be handled by a small crew even in the winding canals.

Another consideration is that Holland is a flat country and there is little terrain high enough to break the force of the ocean winds. With all the other requirements, the Dutch boat must be suitable for the heavy winds which sweep across the country, but do not



THE BOEIER—ARRANGEMENT

This boeier is something less than forty-five feet overall but the accommodations are the equal of most sixty-footers. Of exceptional interest is the characteristic projection of the keel at the stem. We have never received a satisfactory explanation of this peculiarity which seems to be a throw-back to the ancient ram bows of the galleys.

roughen the inland streams owing to the small expanse of water at a stated point.

Put in the fewest possible words, a Dutch yacht must be shoal-draught, cheap to build, cheap to maintain, long-lived, weatherly in a chop, comfortable, and particularly suitable for hard winds and smooth seas.

Give these requirements to a naval architect who had never heard of a Dutch yacht and he would produce a craft that would

approach or recede from the Dutch type in the same ratio as the designer was free from convention or as hidebound as many of them are.

The Dutch yacht, as we shall try to describe it, is neither a passing fancy nor an experiment. Dutch yachts have been devel-

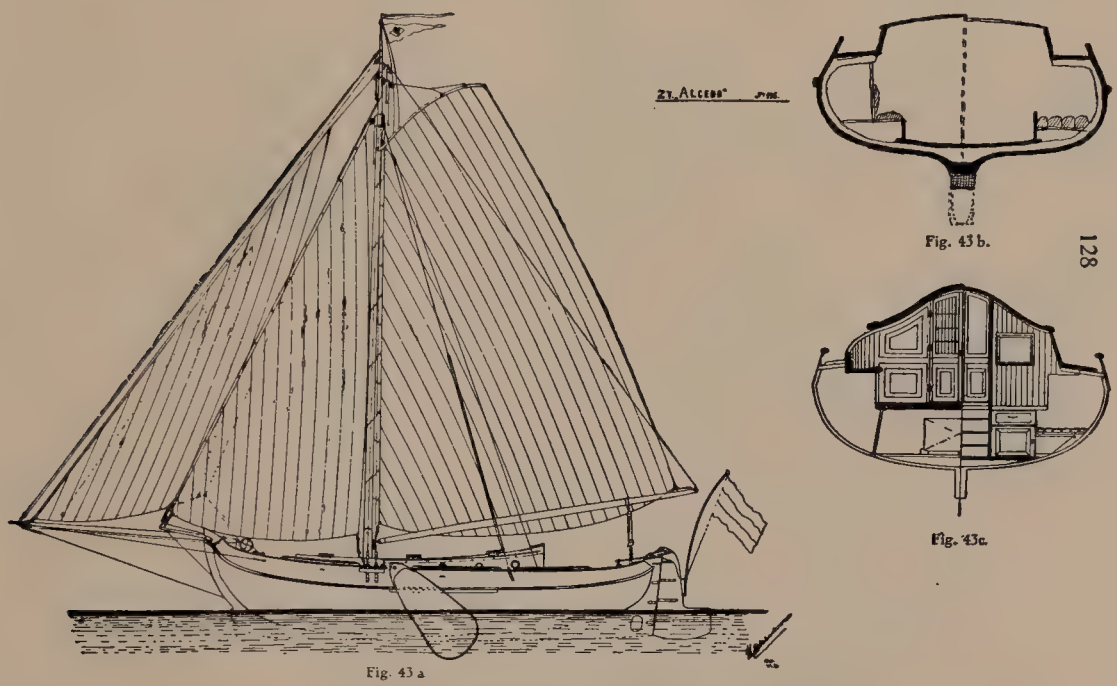


Fig. 43 a

Fig. 43 b.

Fig. 43c.

128

THE BOEIER—SAIL PLAN AND SECTIONS

This sail plan shows a typical Dutch rig as applied to boats of the boeier type. Note that the gaff is curved and that the mainsail is not laced to the boom. Also note that the sail is laced to the mast instead of having hoops or a slide. The curve of the cabin roof is well shown in the profile and also the sections. The carrying of the ensign at the curved flagpole instead of at the peak of the mainsail is another peculiarity of Dutch yachts made possible by the short boom.

oped since the sixteenth century and the boats of today are different from those of several centuries back in minor points only.

With all due credit to other nations and other types of vessels, is it not manifest that types which have retained every vital characteristic for some 400 years must have particular virtues for the work at hand? If but one type of Dutch yacht had remained in existence, we might argue that superconservatism was the

trouble and that the Hollander had simply hung back and refused to make an attempt to improve the type. That argument will not stand in the face of the fact that there are very many Dutch types, and that each has been developed independently of the others in an attempt to improve the breed.

THE BOTTER—SAIL PLAN

A typical Dutch rig is well shown in this plan of a botter. Note that the jib belays well abaft the mainmast, a scheme which is now coming into favor for racing yachts and is being heralded as something new. The narrow leeboard does not seem to have area enough to prevent leeway but several hundred years of sailing has proved it sufficient.

Some writers on the subject claim that there are seven distinct types of Dutch yachts but we believe that nine is a more reasonable figure, considering data collected from sources within Holland itself. It is probable that we are underestimating the types even then. Of course, it is understood that Holland has many yachts of the regulation type for racing and cruising, but in this article we are dealing only with the boats which are peculiar to Holland.

Similar boats are often found in Belgium, and a few have been exported from the Netherlands for the use of yachtsmen in other European countries.

The nine types we will consider are the Schouw, the Botter, the Schokker, the Hoogaars, the Punter, the Boeier, the Lemmeraak, the Tjotter, and the Hengst. If some of my readers take exception to my spelling of the type names, may I plead that the names are as spelled in the book written by Mr. C. H. M. Philippona and titled "Het Zeilen"? To the best of my knowledge, this book is the standard work on Dutch yachting and I believe the spellings to be correct, in spite of numerous other references.

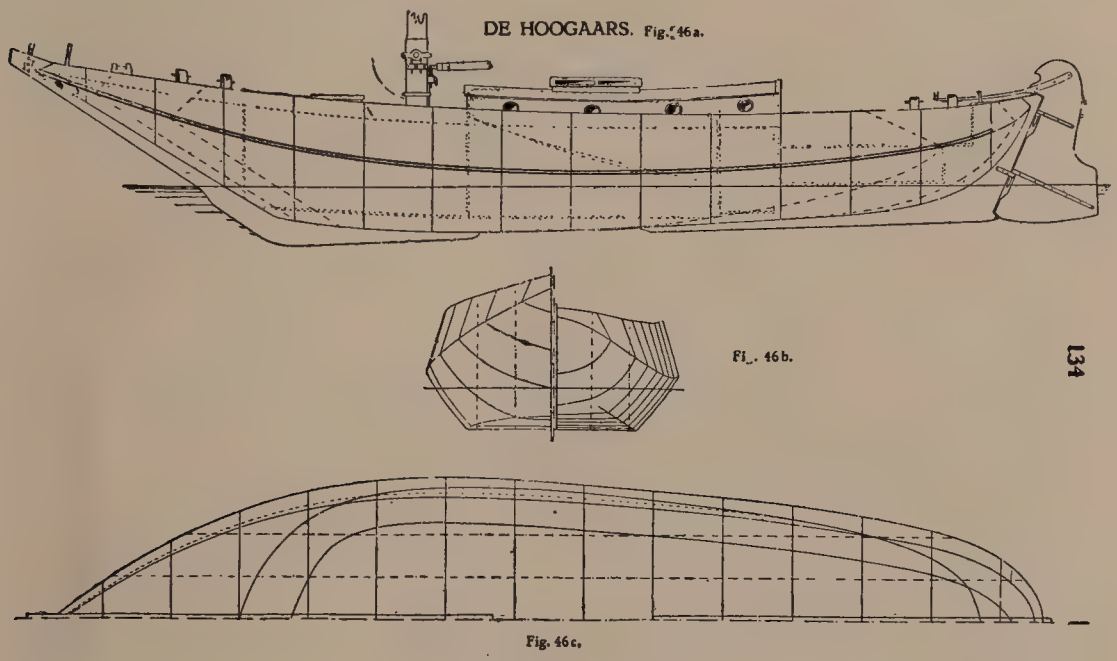
In the make-up of the list of names, I have not made an attempt to place them in order of importance. They appear as they popped into my head while looking at pictures in "Het Zeilen."

The Schouw is perhaps the most radical of all Dutch yachts. It has a flat-bottomed hull with a pronounced rocker fore and aft. Generally speaking, both ends of the craft are the same shape; but the really remarkable thing is that neither end is pointed but that both have a fairly wide transom. The stem transom is raked forward at considerable of an angle, and the stern transom is almost vertical. In section, the flat bottom at its widest point, amidships, is about 75% of the total beam. From the chine the first side plank flares out and upwards at almost an angle of 45 degrees. The next plank up—or the next several planks on a big boat—is at a greater angle to the bottom but almost vertical. Then the final side planks are slightly tumbled-in. In effect a schouw has three chines on each side. The upper edge of the topmost plank is practically straight, so that the boat has little or no sheer, but a sheer moulding is placed at the first chine down from the deck and as that line has a pronounced curvature, the effect is not as unlovely as might be supposed. At the same time, the schouw is not a handsome vessel, and it is seldom built as anything but an open boat.

A typical schouw has a length of 21 feet on deck and a breadth of 5 feet, 10 inches. The waterline length is about 18 feet with most of the overhang forward. The draught with the board raised is about 18 inches. There is a sloop rig with a rather large jib

TWO LARGE DUTCH YACHTS BEFORE THE WIND
The small topsail and the large spinnaker are of interest

filling in the entire triangle formed by the mast, the forestay, and the forward deck and a short bowsprit. The mainsail is not laced to the boom but it is laced to the mast instead of having hoops or slides. The gaff is very short and has a graceful reverse curve in its length. Peak and throat halyards are combined by a clever arrangement of blocks. There are no shrouds to support the heavy mast, although there is a forestay and a topping lift in addition to the single halyards and the sheets.



THE HOOGAARS

These lines of the hoogaars show a marked variation from those of the boeier. Instead of curved sections the hoogaars has straight lines except at the bow and stern. The long overhanging bow is characteristic of the hoogaars, the punter and the hengst. The punter is similar to the hoogaars with the exception of the use of a transom stern.

Our next type is the Botter. Here we find the same wide and flat bottom but on deck the plan is pointed at both ends, although the deck-line forward is so full that it is nearer to being circular than pointed. When one looks at the deck plan of a Botter for the first time one is sure the draughtsman made a mistake, for the bow is rounded and the stern comes to a rather sharp point. The sheer is very pronounced, particularly at the bow. The sternpost rakes

sharply. The rudder, of course, is hung outboard. Let me digress for a moment to remark that an old-time yachtsman recently explained to me the fallacy of what he termed the "new-fangled outboard rudder." I was considerate enough of his seniority not to tell him that the Dutch had been successfully using outboard rudders for centuries. Also the Egyptians, the Vikings, and a few others who antedated Herreshoff and Fife of Fairlie by many, many moons.

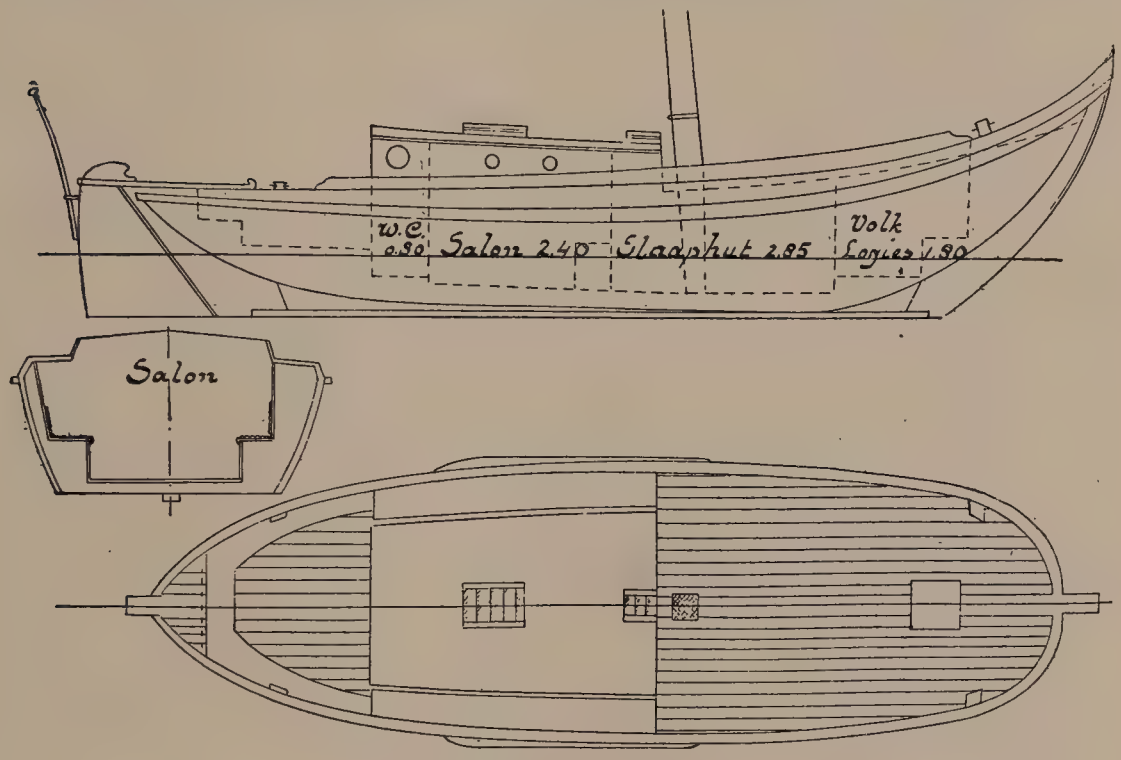
But to get back to our Botter. The fore overhang is gracefully curved and in most cases joins the sweep of the sheer in a very sharp point. In section, the Botter does not have the several chines of the Schouw, but the side frames flare out a little and have just a bit of a curvature to them. Towards the stern the curvature becomes more pronounced. No matter from what angle you view a Botter, your eye will be treated by a sweet sweeping curve.

The narrow stern of the Botter cuts out considerable room when compared to the transom-sterned boats, but it is claimed that the Botter is the best sea boat of all Dutch types. Some Botters carry a bowsprit and two jibs, but a typical boat has almost exactly the same rig as described for the Schouw. One exception is noted. The jib foot is so long that it comes well abaft the mast and the jib sheet belays abaft amidships. I remember reading the other day about some of the recent 6-metre boats. The writer stated that the most successful ones had the new rig with the jib belaying well abaft amidships. It was said that this improved rig has been developed in a scientific laboratory by aërodynamical engineers. I am afraid the aërodynamical experts were several centuries too late. A similar jib is shown in a drawing dated 1550 A. D.

Botters are built fairly large and a typical boat we have measured is 42 feet, 6 inches overall, 13 feet wide, and 2 feet, 6 inches draught with the leeboards raised. In passing, let me say that all Dutch yachts are fitted with leeboards instead of centreboards, and later on I will give a more extended description of these accessories.

Our next type is the Schokker. In plan, this type is similar to the Botter, but the stern is apt to be more full. In profile, the fore overhang is pronounced, but instead of being curved, the stem is a perfectly straight line at an angle of about 60 degrees with the

water. They are among the largest of the Dutch yachts, for we know of one measuring 85 feet in length and 15 feet in width. The draught was but little over 3 feet. Just think of the room in this boat! Schokkers are often rigged as cutters, but others as yawls and ketches. Rigs are not standardized on any of these boats, although the cutter is the prevailing rig on all Dutch yachts.



LINES AND DECK PLAN—THE BOTTER

The section shows the typical botter and should be compared with the lines of the hoogaars, punter and boeier. The bottom is perfectly flat and the side frames but slightly curved. The great curvature of the deck-line forward as compared with the same line at the stern is clearly indicated.

The Hoogaars is a popular Dutch type, and deservedly so, for it is simple to build and a wonderfully fine sailer. In profile, the Hoogaars is similar to the Schokker, with a straight stem and sternpost but a pronounced overhang forward. The bottom is perfectly flat and the main sides flare out at about 45 degrees until the main sheer line is reached. Above that sheer, the sides tumble in to form a high bulwark. All section lines in a Hoogaars are

straight until near the stern and stem, where a little curvature is worked in. Visualize, if you will, the very full deck line at the bow coupled with that extreme overhang. The result is that the section lines forward of the waterline are almost parallel with the waterline. A Hoogaars may pound a bit, but it is beyond belief that the powerful forward section could ever let the deck get under water. Because of these flaring forward sections, a Dutch yacht throws considerable spray, although little of it ever finds its way above deck. When heeled, the flaring sides are nearly parallel with the water and have a lifting tendency to keep the bow out of too close contact with head seas.

The Punter is a development of the Hoogaars and in many ways is the most adaptable of all Dutch types. Like the Hoogaars, the bow has the long, straight overhang, but instead of the stern being brought in as a double-ender, there is a rather narrow transom fitted. One can liken the Dutch Punter to the genuine down east fishing dory. The Punter bottom is a bit wider than the dory, but the entire boat is wider so the flare of the sides is about the same. Towards the transom the Punter loses some of the flare, so the bottom of the transom is not as sharp as that of a dory. The additional bearing aft makes the Punter a better sailing proposition than the unmodified dory. Above the main sheer the Punter has an additional height of side which tumbles in aft and gradually comes plumb as the bow is reached. The Hoogaars has this same shape and both types really have two chines. As but one chine is below water, the construction is not difficult and as all section lines are straight, there is no steam bending of frames. Before you jump to the conclusion that the Punter is ridiculously simple to build because of the straight frames, let me tell you that the pronounced curvatures in plan and profile make plank steaming a necessity.

Although, as mentioned before, rigs are not always the same on boats of particular hull type, it does seem that most Punters have a single jib on a short bowsprit and a leg-of-mutton mainsail. The mainmast is short and the mainsail is almost as long on the foot as on the hoist. All these boats have mainsails not laced to the boom.

A Fleet of Open Dutch Yachts Running Before the Wind
It seems that the three yachts in the centre have just escaped collision by a hair

A very popular Dutch yacht is the Boeier, the first type we have mentioned which does not have a flat bottom. The sections of a Boeier are round, very round, and look almost as if they were drawn with a compass. On deck the Boeier has very full ends. In fact, if you drew two semicircles but slightly less in diameter than the maximum beam of your boat and connected the curves with a slightly bulged line you would have a Boeier. More than any other Dutch type, the Boeier is curved. Not only is the hull a mass of sweet, intersecting curves, but the cabin houses are also curved in every direction. Even the deck beams, or rather the cabin roof beams, are a compound curve. If there is a National Association of Steam Box Manufacturers, I would suggest that they organize a lobby to force Boeiers on the American public.

It seems impossible to find any line in one of these boats that runs straight for more than a few inches. To an artist the Boeier is beautiful; to an American boat builder the craft would be a nightmare of steam bending.

The Lemmeraak is so closely allied to the Boeier that I have some doubts about mentioning it as a separate type. The Lemmeraak is often built of steel—probably the Dutchman finally rebelled against all that steam bending and turned to the furnace and the bending slab.

The Lemmeraak is a bit finer at the stern and in general is not quite so circular in appearance. It is built in sizes clear up to 80-odd feet in length and has as much room as a canal boat.

The Tjotter is another round-bottomed boat but her lines are less radical than the others, being roughly those of a sandbagger catboat with the very important exception that the deck-line of a Tjotter is just as roly-poly as the Boeier and the profile is similar. If you took a Boeier and redrew the section lines with a more pronounced bilge and a suggestion of S-frames down near the keel, you would have a Tjotter. The breadth is apt to be more than half the overall length. I can readily believe that the amidships girth from sheer to sheer is as great as the overall length. Perhaps it is well that Tjotters are not built in large sizes. There would not be room for many of them in the waters. They have to be careful about sudden rises of water levels in a flat country like

Holland, and the simultaneous launching of a fleet of Tjotters would inundate the nation.

Finally, we come to the Hengst. This is a throwback to our old friend, the Hoogaars, but the overhang forward is less and there are other slight modifications of line which make her look more stubby than her ancestor. While we make no claim as being an expert in historical analysis, we believe something serious happened

This botter undersail has the windward leeboard down, a condition only permissible when the boat is making short tacks, and there is but little time to raise the heavy board.

to a Hoogaars one time and they called the result a Hengst. Probably we are libelling a perfectly good Dutch type, but we feel the same about the Hengst as we do about the beam of a Tjotter.

We promised you a few words about the Dutch leeboards. Considered from an engineering point of view, the leeboard is impossible. Such a rig could not possibly have any effect in preventing leeway. Looked at from the practical side, the leeboard is also so much wasted lumber; all of which means absolutely

nothing at all, for the simple reason that the Dutch have been using leeboards since Columbus managed the first transatlantic tour. Or was it the Vikings? At any rate, leeboards were good then and they are still good, so good, in fact, that various other Europeans have stolen the idea for shoal draught commercial boats and a few yachts.

A few sailing canoes use leeboards in America, and we yachtsmen look upon them in pity and try to explain the idea with the excuse that they are handy to stow away when the canoe is set up in a rack in the house. If you know the canoe leeboard you also know the Dutch leeboard. They both work, wonderful to all beholders.

You may have noticed that most Dutch yachts have sides tumbling-in above the main sheer. The leeboards are fastened flush against the sides of this tumble-in and when the boat is heeled to a normal sailing angle, the leeboard is at right angles to the water surface where it can exert its maximum effect. The Dutchman seems to know more than the price of schnapps. School newspapers of colleges teaching naval architecture, please copy.

Now, having digested the advantages of the vertical leeboard, please consider the fact that historical drawings show leeboards of the sixteenth century which in section have what is now known to aëronautics as the aërofoil section. Wind-tunnels tests with delicate instruments, totally surrounded by marvelling scientists, have determined that the aërofoil section has the least resistance.

Back in our callow days we sang a song, "It takes the Irish to beat the Dutch." That may be so, but it seems that it takes the Dutch to beat the scientists—by several centuries.

Aside from the curved gaff, the Dutch sail-rig is not unlike the other North European designs. Mast hoops are used in the larger yachts, the sails are rather full and plenty of sheet is needed to sail them at their best. We can readily believe that you cannot pinch any Dutch yacht going to windward. Give her a flowing sheet and she will pick up her hooped skirts and romp away in fine style; but try to put her off a couple of points and she will lie and sulk, pounding up and down with that full bow of hers.

Dutch yachts are strong. They go in for oak planking and frames hewn from trees—solid, massive construction. A Dutch

yachtsman once told me how many years the timber had to lie in water, after being cut at a certain time of the year, and then air-seasoned for another period of years. At the time, we figured that a man wanted to place an order for a boat when he was very young in order to have it by the time he was middle-aged. The boat builders over there must be working on timber their fathers cut

Wielewaal is a Lemster-yacht, a Dutch type found in one section of the country. She is built of steel. Note the use of hooks on the halyard blocks instead of shackles.

down. It all makes for longevity, freedom from dry rot; but think of it in these days of standardized boats!

From my point of view—and I am not Dutch, nor have I any connection with that little kingdom—the typical yacht of the Netherlands is exactly the boat for the shoal coastal waters of Barnegat Bay, Great South Bay, Jamaica Bay, Albemarle, Croatan and Pamlico Sounds, and the waters of Florida. They are

fast, room and comfort considered; they will stand any sea raised in the waters mentioned; they are a real little ship without any of the geegaws of the "gentleman's yacht"; and they will last longer than nine-tenths of the lightly-built afternoon racers.

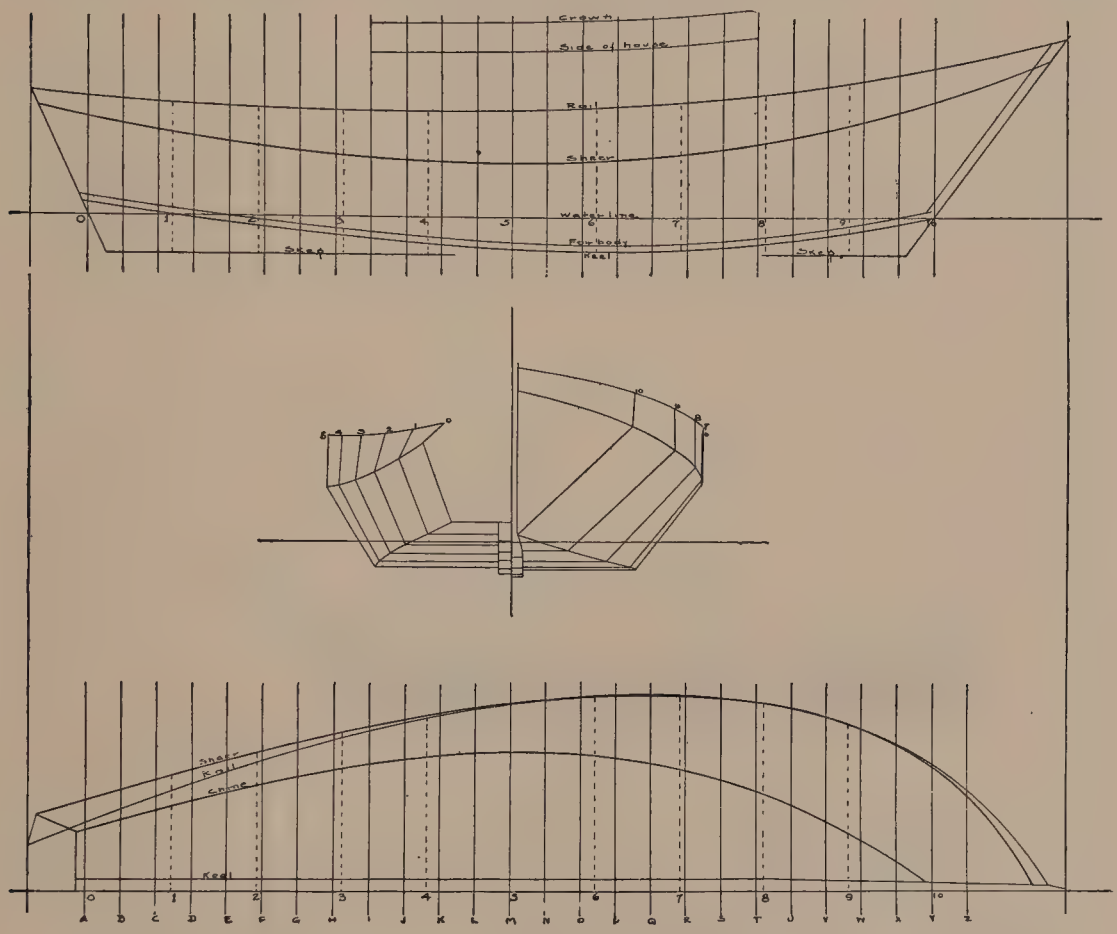
At least, I have come to that conclusion after studying the boats for several years, and I am backing my decision with a punter-type yacht now building for my own use. But that, I guess, had better be considered another story.

EDITOR'S NOTE.—Mr. White's paper on Dutch boats, so attractively written, and so enthusiastic in its praise, makes me wonder why we continue building our slim and graceful yachts, which are referred to as "she," probably because they resemble the typical slender American girl; or, may be, as the jokesmiths say, "because they cost so much to rig." Mr. White would like us to change our national style in boats; and build fat and bulging yachts, as the Dutch do. No doubt, these also are referred to as "she" because their outlines resemble those of the peasant women of that nation, with all evidence of "loss of waistline" and, contrary to our American reason, because they cost so little to rig.

It will be interesting to consider Mr. White's past sailing experiences and early life to see if we can ascertain how he "got this way." We find he began early, and at the age of fifteen years was apprenticed to a boat builder. Five years of this work, and the little knowledge—"so dangerous"—gained, made him think he had cast his anchor in the wrong channel; so we find him at the age of twenty embarked in the journalistic field of yachting. Some few years of this work, accompanied by slim remuneration, which means insufficient nourishment, forced him to get "under way" again to explore the mysteries of boat designing. Here we find him "dragging some mud," with the result that a few of his creations, although not world beaters, are today afloat and giving satisfaction to their owners. Not being content to be without knowledge of the sea and how to handle a helm, he took a job on a New York harbor workboat and later became a captain. After the war, during which terrible time he was engaged in boat designing, we find him cruising under sail and power on the eastern American coast and

taking chances in speed-boat racing. His family and friends were glad to see him give up this dangerous sport, to take a position with *The Rudder*, of which he is now the able editor.

You will see that nothing has been developed that explains his love for the Dutch boats, unless it may be his captaincy of the New

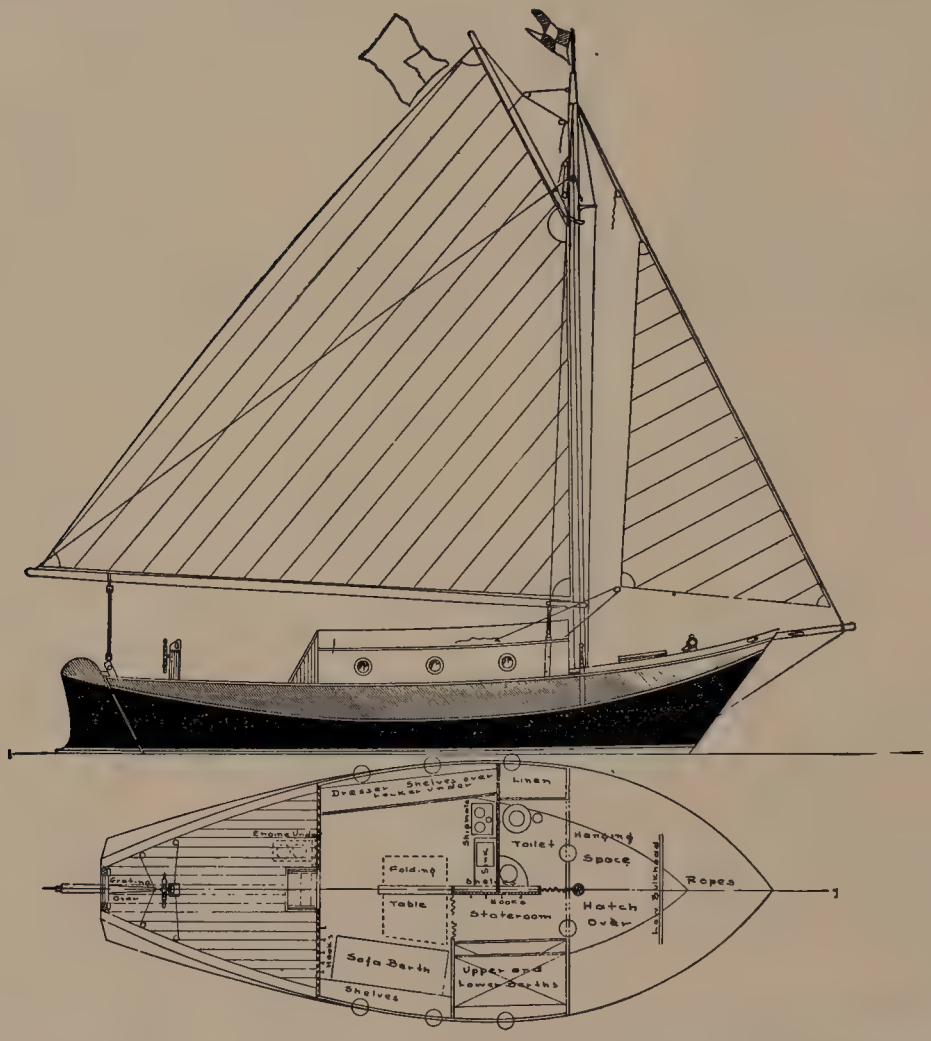


THE LINES OF MR. WHITE'S DUTCH BOAT (Imitators Beware—Editor)

York workboat or his vast sailing experience. The fact, nevertheless, remains that Mr. White is building a craft of this kind, charmingly named Grey Dawn, at the Gesswein plant in Brooklyn, N. Y., and in that way showing confidence in his own opinion.

During construction, the comments of visitors and builders have been many and varied; and sometimes interesting, as is the following quotation from one of Mr. White's letters: "My own Dutch-

type Ketch is now all planked and looms as big as a circus tent and the remarks made about her by different visitors at the shop are amusing. One man said he wanted to ship as crew for a trip around the world, another said she wouldn't be worth a whoop



Sail Plan of Mr. White's Dutch Boat now under Construction in Brooklyn, New York

outside of the calm waters of New York Bay. Some workmen said she was too lightly constructed, while others, they never worked on so strong a hull. I think her strange shape has them all guessing and I will be satisfied if she is just a good, comfortable craft to drift around in when the wind is fair or swing at anchor when the con-

ditions are bad. So many people seem to think that I have built her as a combination round-the-world cruiser, racing machine, or hydroplane, it is impossible for them to get the idea of compromise."

Grey Dawn is 37 feet overall, 30 feet waterline, and 14 feet beam, draught (with 10 H. P. engine installed and with board or boards raised) less than 24 inches, sail-area 565 square feet. Construction is heavy, with oak frames and 1¼-inch yellow pine planking, cabin headroom from 6 feet to 7 feet, and in construction no fancy joiner work is being installed, and everything is painted to cut down expense and to minimize upkeep labor. A regular Dutch "she," in fact.

The design was made by Mr. White, who desired a roomy boat in which he and his wife could live for the entire summer. The hull had to be economical to build and to maintain. An unusual amount of headroom was desired to make the cabin cool in the hottest weather. As the owner is enthusiastic over shoal-water cruising, including the waters of the Inside Route between New York and Palm Beach, he required a centreboard boat and one with a bottom so shaped that if she did take the ground on a falling tide she would remain upright until the incoming tide floated her.

Seaworthiness was desired, up to the point where the boat would be suitable for short ocean trips along the coast, but no thought was given to creating a craft for long deep-water voyages. Because the boat is to be sailed for the most part with but two on board, a short, easily handled sail-plan was required. For use in light airs a 10 H. P. engine was installed under the afterdeck.

Originally a ketch rig was designed, but various conditions forced a change to the sloop rig shown. The typical Dutch leeboards were abandoned in favor of a centreboard. This change was made chiefly to get away from the unconventional appearance of the leeboards, and not because they are inefficient.

As the Dutch yacht seemed ideally to fill the owner's requirements, a craft was designed on the same lines as the Dutch Punter, a modification of the Hoogaars. In the article on Dutch types, it is mentioned that the Punter is similar to the Hoogaars with the exception of the use of a transom stern.

A glance at the arrangement plan will show the vast amount of

room obtained in Grey Dawn II. If you note the lack of the usual lockers, it is because the forecastle is of such great size that all the clothes necessary can be hung in there without shutting them up in a more or less air-tight compartment.

Instead of the usual built-in berths, the household type of spring cot with mattress was used. At the after end of the saloon berth are hooks for oilskins, and additional hooks for clothes needed in a hurry are in the stateroom. As the saloon berth is a telescoping cot, four people can be accommodated.

In place of the expensive and usually troublesome sliding hatch for the main companion, a sort of "cellar-door" hatch was arranged. This is easy to open from below or on deck, is perfectly tight, and the side pieces form a sort of shelter, in which a chart may be examined or a pipe lighted without going into the main cabin to disturb those asleep.

We all wish Mr. White success with his new boat, and a long life.

TEN-METRE CLASS

By Clifford D. Mallory

YACHT racing on Long Island Sound is principally confined to Championship races, the dates for which are authorized by the Yacht Racing Association of Long Island Sound, and distributed among the Yacht Club members of the Association, located on the western end of the Sound.

The schedule for the season of 1927 consisted of twenty-one races, divided among fourteen clubs. The average distance from the home port of a yacht to the starting line is about five miles. Other racing that has a strong appeal is held during the New York Yacht Club Cruise and the Interclub Cruise.

Because of this type of racing a cabin yacht is very desirable. The New York Yacht Club 30-footers have been very popular for this reason, and for twenty-three years have demonstrated their excellent qualities and fitness for the type of racing in question.

In the fall of 1926 a number of yachtsmen met in New York, to discuss the formation of a new class of boats, to supplement the 30-footers, and eventually to become their successors. Class Q was discussed, but because the development of the Universal Rule had tended to a rather extreme type, an investigation of the International Rule was made, and compromise plans were submitted for a 10-metre yacht. This indicated a very wholesome type, just enough larger than a Q to give much greater accommoda-

American Ten Metre Boats
Designed by Burgess, Rigg and Morgan of New York, but built in Germany

TEN-METRE BOAT
Designed by Burgess, Rigg and Morgan

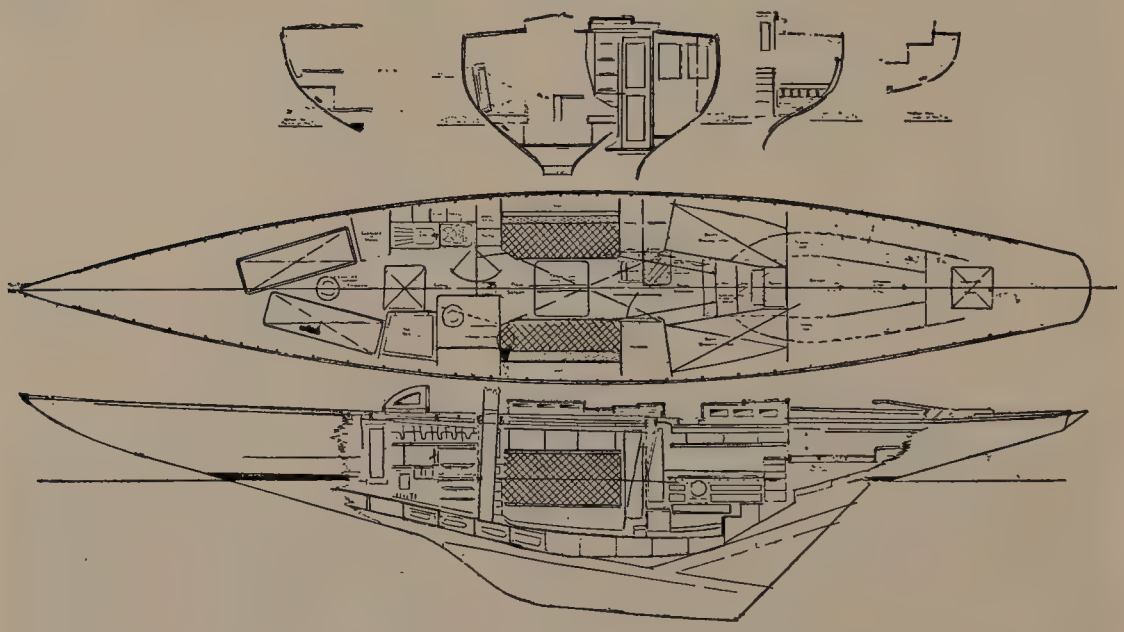
tions, including a very good after stateroom, with full headroom under a flush deck.

The contract was given to Burgess, Rigg & Morgan, on behalf of the builders, Abeking and Rasmussen, of Lemwerder, Germany, for fourteen yachts, to rate 10 metres. The plans and specifications called for the following dimensions:

L. O. A.	58′ 8.5″
L. W. L.	36′ 00″
Beam	10′ 6″
Draught	7′ 6″

Sail-area, 1,340 sq. ft. in mainsail, forestaysail, and jib.

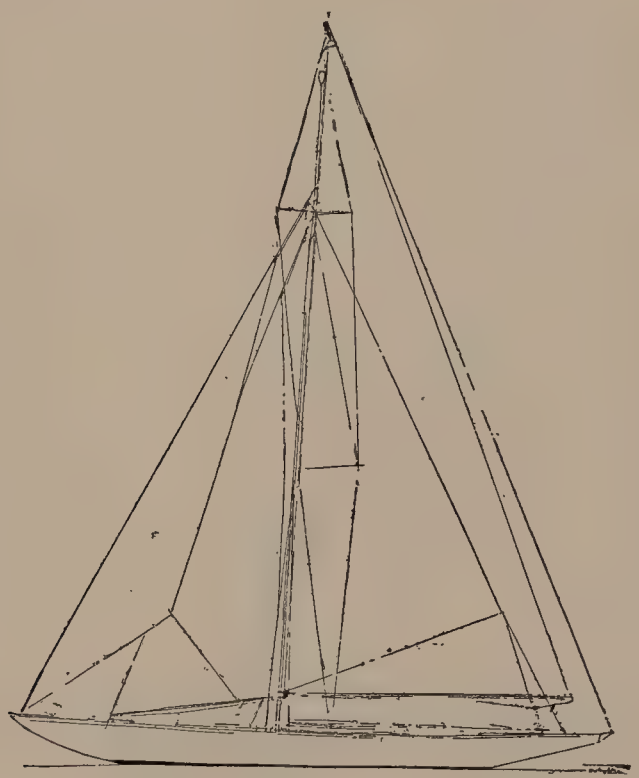
The accommodation plan provided for a forecastle for two paid hands. Aft of this there is a fully equipped galley, with ice box



BODY PLAN—TEN-METRE CLASS
Designed by Burgess, Rigg and Morgan

holding 250 pounds of ice, a main salon with two spring berths which fold down, sideboard, and china locker. On the port side forward is a toilet room and at the after end of this compartment, the companion ladder is located, at the foot of which an oilskin locker has been cleverly installed. On the port side opposite the

companion ladder is a very large hanging locker, the door to which when open acts as the door to the stateroom. In this compartment are two large spring berths, a good-sized hanging locker, a toilet under a cushioned seat, a folding wash basin, and across the after end a bureau with drawers. Above and back of the bureau is another companionway, giving direct access to the cockpit, which is rather deep and wide.



SAIL PLAN—TEN-METRE CLASS
Designed by Burgess, Rigg and Morgan

Mr. Burgess decided to construct these yachts on a semicomposite principle; that is to say, the construction is of wood with the exception of every alternate frame, which is steel, and the floors, which are also steel. Further, there is a steel girder running about 10 feet fore-and-aft under the heel of the mast. This method has worked out very well indeed and has given entire satisfaction.

The 10-metre yachts were delivered in Halifax, eight of them, by the American steamer, West Harouvar, about the first of June.

TEN-METRE BOAT
Designed by Burgess, Rigg and Morgan

As the yachts had been equipped with lifting bolts, passing completely through the lead keel, it was a very simple matter to load and discharge them, and the chance of damage to the hull was minimized; in fact, no damage was caused in transportation.

The specifications were so complete it was only necessary at Halifax to place on board the required stores to get away.

The record of the voyages of these fourteen yachts from Halifax to Long Island Sound indicates they experienced many varieties of weather. Most of them contended with some fog, and others had good weather, and some sailed through heavy weather; but in no case was there any damage to the yachts. They proved themselves to be fast and excellent sea boats. One of the 10-metres later in the season made a trip from Long Island Sound to Chesapeake Bay and return. She experienced no difficulty and proved herself very well suited for this character of work.

TEN-METRE YACHT, TWILIGHT

During the racing season, in addition to the Championship races, the 10-metres participated in many special races, and in the New York Yacht Club Cruise. In June the Esquilla entered the New York Yacht Club races held at Newport and defeated all of the yachts participating in the race open for all sizes of craft.

These boats have proven fast under all conditions. Despite moderate sail-area, they do very well in light weather, and in heavy weather they are seaworthy and stable.

The sail-plan shows a double head rig, which some yachtsmen looked upon with skepticism, but from the experience of the sum-

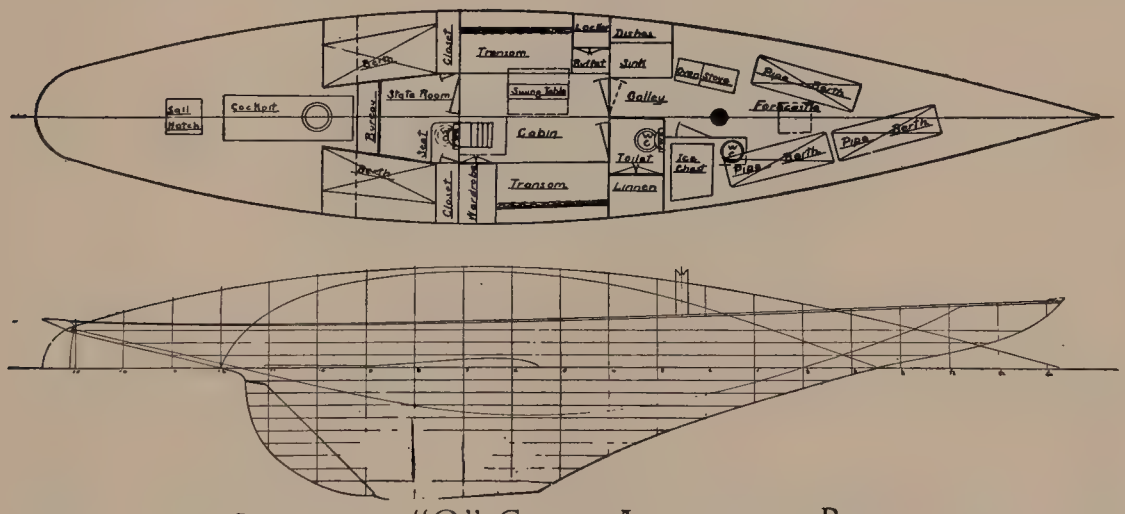
mer of 1927, the use of two headsails seems to be very satisfactory, both on the wind and with started sheets. With the large forward triangle, efficiency was particularly notable when sheets were started. This also permitted the use of a large spinnaker, which helped to account for their speed with the wind directly aft.

LARCHMONT "O" CLASS

By Edwin J. Schoettle

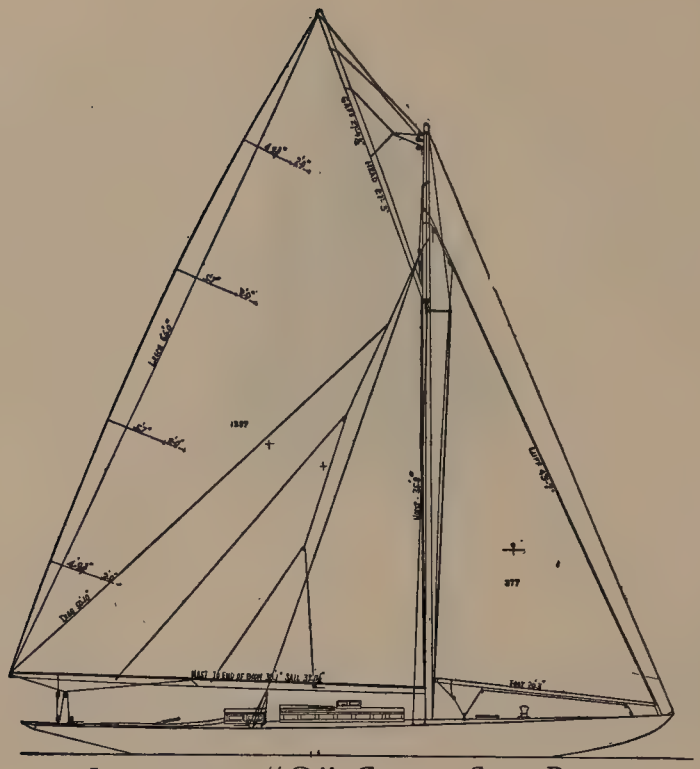
THE Larchmont one-design "O" class boats were designed by William Gardner, and built by Wood & McClure of City Island, New York, during the winter of 1916, and launched in the spring of 1917. These boats were for members of the Larchmont-New York-Manhasset Bay Clubs.

The owners wanting a boat between the two classes, P-boats and N-boats (the P-boats being out-and-out racers and the

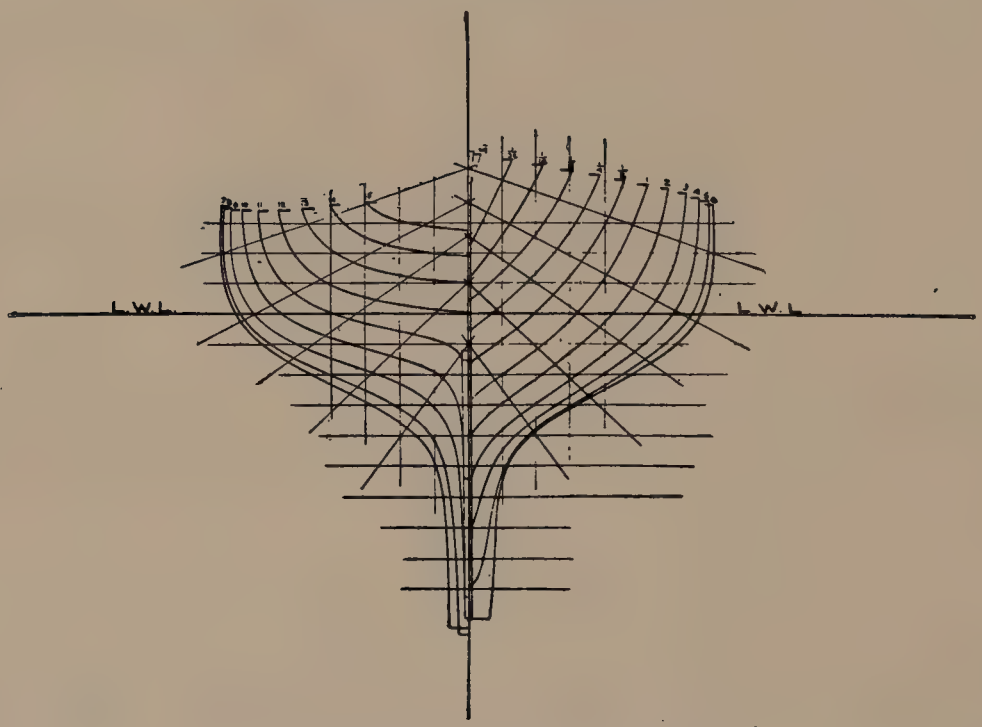


LARCHMONT "O" CLASS—ARRANGEMENT PLAN
Designed by William Gardner

N-boats too large), the O-boats were designed, which rate about 35.63.



LARCHMONT "O" CLASS—SAIL PLAN
Designed by William Gardner



LARCHMONT "O" CLASS—LINES
Designed by William Gardner

LARCHMONT "O" CLASS

The Yacht Racing Rules used by the American and Canadian Clubs were as follows:

Boats rating not over 31 feet and over 25 feet—sail in class " P."
Boats rating not over 38 feet and over 31 feet—sail in class " N."

The frames, planking, etc., of the O-boats were designed to fit the Yacht Racing Association's scantling rules, and were designed as follows: Overall length 59 feet, 10 inches, waterline 38 feet, 6

LARCHMONT "O" CLASS
Mirage, Larchmont O-boat won the title for 1927

inches, draught 7 feet, 10 inches, beam 12 feet, 0 inches. Their displacement is 554 cubic feet, or 35,500 pounds, and they have 18,176 pounds of lead on the keel. Their actual sail-area was 1,704 square feet, 1,327 square feet in mainsail, and 377 feet in jib. This was the original gaff rig used by the boats in 1917, their rigs being all changed to Marconi by Mr. William Gardner in 1926. The area of the Marconi sails is about 1,700 square feet.

Six of these boats were built during 1916 and 1917, and none

Photo by Rosenfeld

LARCHMONT "O" CLASS BOATS
Designed by William Gardner
Left to right—Varuna—Grey Dawn—Mirage

Photo by Rosenfeld

LARCHMONT "O" BOATS IN A CLOSE RACE ON A WINDY DAY
Note the amount of water on the leeward deck of the L 5

have been built since. The present names and owners of the boats are as follows:

Varuna, owned by Commodore James B. Ford, Larchmont Yacht Club.
Georgia, owned by Charles Lane Poor, New York Yacht Club.
Celeritas, owned by H. Kendall Hester, Larchmont, N. Y.
Mirage, owned by T. J. S. Flint, Larchmont, N. Y.
Nimbus, owned by E. P. Alker, Manhasset Bay Yacht Club, Port Washington, L. I.
Grey Dawn, owned by Philip Johnson, Philadelphia, Pa.

The cost of these boats—in 1917—was about $12,000.

The boats are still racing as a class; they are smaller than the New York Yacht Club's 40-footers, but can beat them to windward. The forties, however, pass the O-boats reaching.

BIOGRAPHY OF MR. WILLIAM GARDNER

By Francis Sweisguth

TUDENTS of naval architecture, especially those who are interested in the design of the sailing yacht, must realize that it is to men like Burgess, Herreshoff, Cary Smith, and Gardner that Americans owe the greater part of the progress made since 1890 in the development of yacht design.

During this period the youngest of these, Mr. William Gardner, has been famous as a designer of yachts that were beautiful as well as fast.

Attention was first attracted to him by the wonderful qualities of the schooner Atlantic, which won the race across the ocean in 1905. While this race may have brought him popular recognition, it is the performance of his smaller yachts that stamped him as one of the leading naval architects of the world.

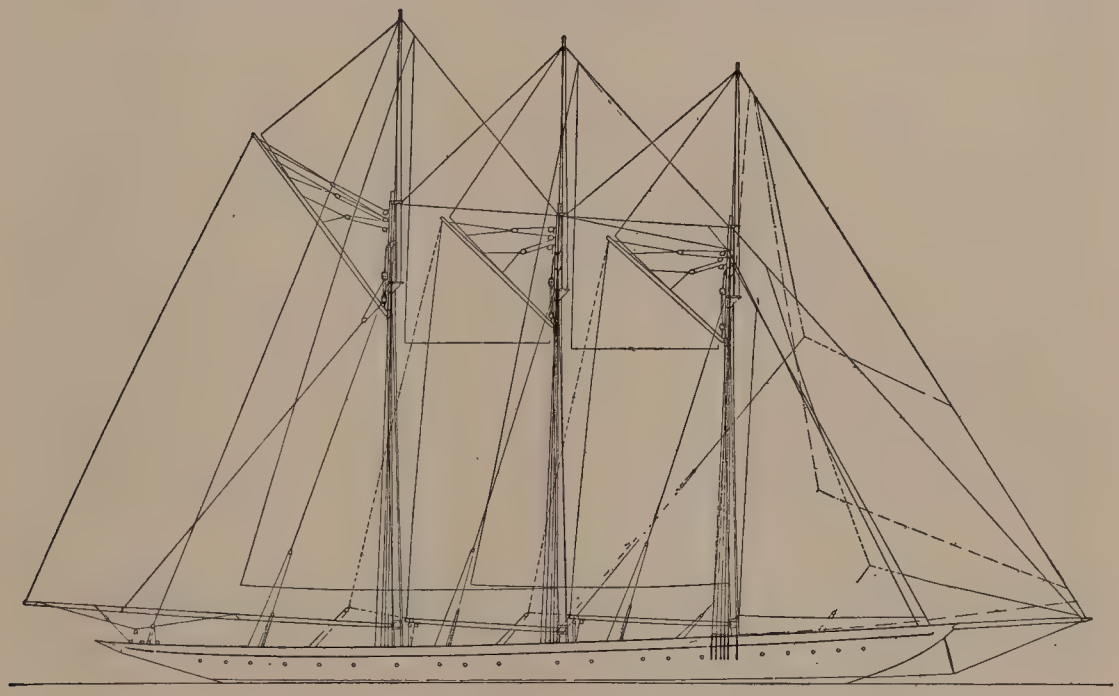
Mr. Gardner, about whose life so little is known, was born in Oswego, N. Y., on Lake Ontario. From his ninth to his fifteenth year much of his time was spent travelling, and it was during these years that he made his first sea voyage. Entering Cornell University at the age of fifteen, he graduated about 1880. After leaving college his first position was with the Delaware River Iron Ship Building Co., then known as John Roach's yard, where he worked in the mould loft, draughting room, out in the yard, at fitting, in the plate shop, and foundry, acquiring a practical knowledge of the building of ships.

Good fortune led to his making the acquaintance of Gatewood and Bowles, American naval constructors who had not only been honor graduates of Annapolis, but who were the first American naval constructors to graduate from a foreign naval college. This association and the friendly advice of these two inspired Mr. Gardner to go abroad to complete his studies, his chief desire being to follow their example and obtain entrance to the Royal Naval

Mr. Gardner's Atlantic
One of the great boats of the modern times

College at Greenwich, England, a privilege confined strictly to government pupils. The instruction could not be had in any other way, so Mr. Gardner obtained government employment, and after many attempts, succeeded in being admitted to the Naval College.

At Greenwich he studied higher and applied mathematics and the fundamental principles of naval architecture. The lectures and studies were confined solely to the design and construction of warships, torpedo boats, destroyers, and government vessels of war.

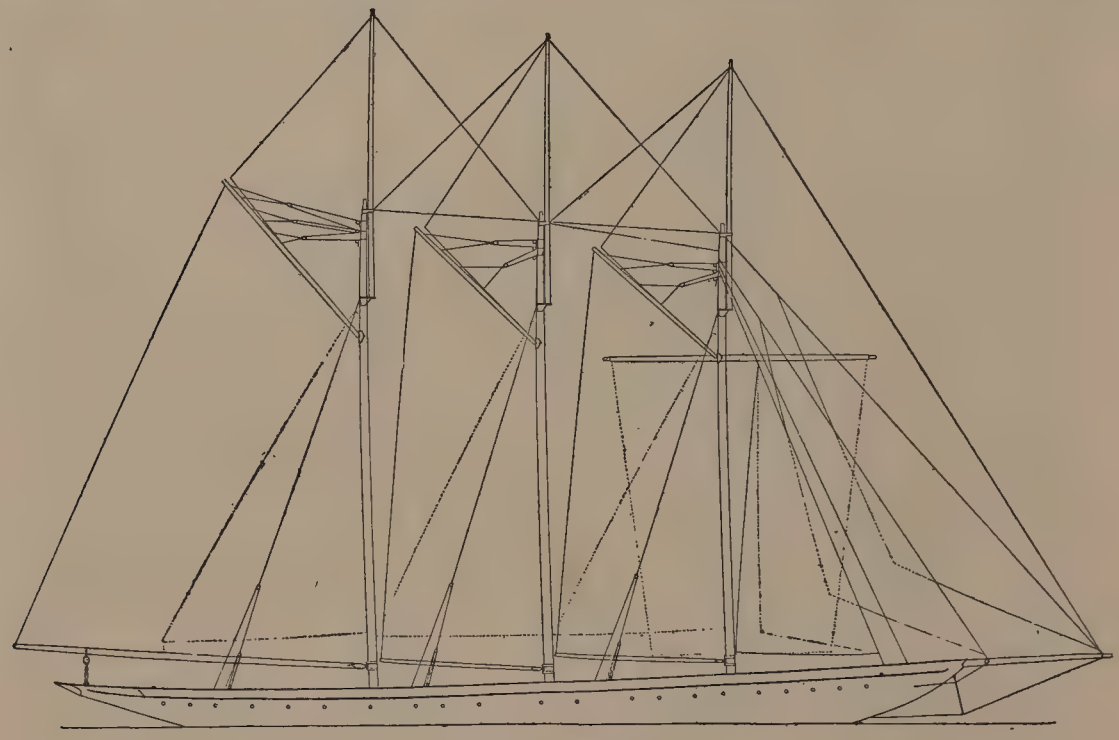


YACHT ATLANTIC
Designed by Wm. Gardner. Summer rig

While there he designed a battleship and a cruiser, making all the drawings and calculations. Mr. Gardner also persuaded two great specialists (Reid and Jenkins, Lloyd's leading authorities on structural strength in merchant ships) to give him private instruction. His summer vacations were spent in yachting and visiting the numerous shipyards, although his studies at Greenwich were not devoted to yacht designing, but to the science of naval architecture and shipbuilding.

The acquaintance of Fife, Watson, and other leading yacht

designers and many of the leading yachtsmen of England was of value to him. After leaving Greenwich he went to Tyne and the Clyde, where he spent two years in practical work in the shipyards. Whenever the opportunity presented itself, trips to sea were taken, because he considered that no naval architect's training was complete without personal observation of the action of vessels in use.



YACHT ATLANTIC
Designed by Wm. Gardner & Co. Winter rig

Mr. Gardner and his fellow students were instrumental in having the Admiralty adopt the practice of sending naval constructors to sea, a practice that has since been adopted by the United States Navy.

In 1888, after returning to America, he established himself permanently in New York as a naval architect, and his first order for a design was given to him in the fall of that year by William Whitlock and C. W. Wetmore, for two 40-foot waterline cutters, Kathleen and Liris. These graceful boats, of light construction with long overhanging sterns and beautiful clipper bows, made a great name for the young designer. The long years of study of

construction and naval science gave him the knowledge necessary to design the hulls strong and powerful enough to carry their enormous sails. The confidence he had in his own work prompted him to guarantee the owner that Liris would win three out of five races against a fleet of ten boats. The accomplishing of this, and

CARTOON—A LIGHTLY-BUILT RACING SCOW
Although Mr. Gardner did not specialize in this type, Cartoon was a remarkably fast boat

the fact that Kathleen, in her class, won practically every race she entered in the first two years, stamped Mr. Gardner's work with merits.

Mr. Gardner's next yacht of importance, the 90-foot schooner Alcea, was raced here and later sold to Germany, where she was renamed the Nord Quest, and won many prizes.

In 1895 the Norota was designed and built for Mr. F. M. Hoyt, who in 1897 followed with another order for a 45-foot cutter, the Syce. B. F. Wood built these, and at the same time also built for an American yachtsman another boat (Kestrel, designed by William Fife), to race against the Syce. The Syce easily defeated her rival and proved herself to be an almost unbeatable champion.

SYCE

The boat that Mr. Gardner designed for Fred M. Hoyt in 1897. The design of this boat was far in advance of her time. She was champion in Class K, beating the Kestrel designed by Fife.

In 1896, between the time of Norota and Syce, he designed the steel schooner Quissetta, which had as her principal competitor the Cary Smith schooner Amorita. Quissetta, although smaller, finally triumphed, and won the championship, along with many other of the season's prizes.

Although freak racing yachts were not of much interest to

Mr. Gardner, he designed for Parker Brothers of Boston, in 1898, the round bilge scow Cartoon, equipped with a narrow bronze fin and a dagger rudder. This boat, built to race in a 25-foot cabin class, with the only restriction applying to the waterline length, was designed with a peculiarly light cabin the shape of an inverted mandolin. The Cartoon was as extreme in both design and construction as the present inland lake bilge-board scows and presented a good early model, now so well developed. She so outclassed all competitors, it has always been regretted that she was not afloat for a longer time to show the speed she possessed. This was not possible because the lightly constructed racing freak was unfortunately dashed to pieces in a bad storm at City Island, N. Y., in 1901.

The success of the Mira, designed in 1899 for Charles Lane Poor, prompted Mr. W. H. Ward in the year 1901 to commission Mr. Gardner to design for him another 35-foot cutter which was named the Dorwina, built by Wood, who also constructed the Mira. Dorwina was sailed by Wilmer and Addison Hanan, who won fourteen out of fifteen races the first season.

Another daring innovation in yacht construction was introduced in 1902, in the building of two bronze cutters. The Weetamoe, for the late Senator Henry F. Lippitt, of Rhode Island, and the Neola, for Mr. G. M. Pynchon, of New York, were 85 feet overall, only 51 feet on the waterline, and carried 5,000 square feet of sail in a cutter rig. Weetamoe was built entirely of bronze with bronze frames, by George Lawley and Son, of South Boston. Neola had bronze plating, stem and stern casting, but her frames and deck beams were of steel; and she was built at the yard of Townsend and Downey, Shooters Island, in the Kill van Kull, off Staten Island, N. Y. The racing between the two was very keen the first season, Neola having a slight advantage until she lost her hollow mast in a squall, the replacing of which with a solid stick lessened her stability somewhat and hurt her in a breeze. Weetamoe and Neola were designed under the old load waterline and square root of sail-area rule, which was then in use by the New York Yacht Club. In 1905, when a new rule, which was the forerunner of the present Universal Rule, was adopted by the New York Yacht Club, the

Weetamoe and Neola, which had very flat sections forward and aft, had their bows changed to reduce their tax and also to gain advantage of extra waterline length.

Picture of Neola that was a sister ship of Weetamoe. Mr. Gardner designed these fast boats in 1902 and later in 1908 they were altered and given longer and sharper bows, so they could sail under the new rules.

In spite of the time allowance against them and the fact that they were old boats of another rule, with rebuilt bows and flat sterns, they were able with equal skill in handling, to beat the new boats designed to fit the revised rule.

In 1905 the famous Atlantic (one of Mr. Gardner's greatest successes), which won from a fleet of the world's largest and finest ocean-going yachts the ocean race from Sandy Hook to the Needles, for the famous "gold cup" presented by the German Emperor. The Atlantic was designed for Mr. Wilson Marshall and built by Townsend and Downey, and is 187 feet long overall, 137 feet on the waterline, 29 feet beam, schooner rigged with three masts. Auxiliary power is furnished by a triple expansion steam engine and a water tube boiler, using oil fuel.

After completion, Atlantic in the fall of 1903 was given a trial trip to the West Indies. In 1904 Atlantic won the Cape May Cup and also the Bretton Reef Challenge Cup.

Upon receiving word of the ocean race for the Kaiser's cup, Mr. Marshall engaged the famous cup defender skipper, Captain Charlie Barr, and Atlantic was made ready for the coming event, and was taken to the Morse Iron Works at Bay Ridge, Brooklyn. All the ballast which was then on the inside was taken out, because Gardner had decided that she should have an outside keel. Mr. Mathew E. Fletcher, a skilled draughtsman from Mr. Gardner's office, was given charge of the alterations. Careful measurements were taken and a keel pattern was made, and from this pattern lead was cast and fitted to the bottom of the Atlantic's steel keel. This change improved the boat wonderfully, and it is known to all yachtsmen how this yacht, after crossing the starting line, was never passed and won the race in the record time of 11 days, 16 hours, 22 minutes, from Sandy Hook to Bishop's Rock.

Cutter Aspirant, designed for the Hanan boys, and built by Wood, launched in 1903, was another great success. The Aspirant was 64 feet overall, 40 feet waterline, 11 feet, 8 inches beam, 9 feet draught, and was planked with mahogany over bronze frames. This boat was handled in all her races by the invincible amateur skippers Addison Hanan and his brother Wilmer, and in two years of hard racing lost but two races.

The ambition of every naval architect is to design an international cup defender, the defence of the America's cup being, of course, the greatest of all contests. But next comes the Canada's

Cup and the Seawanhaka Cup, which are stepping-stones to international glory.

In 1902 the Canadians, always crack sailors, challenged the Rochester Yacht Club, which at that time held the cup, won by the Genesee in 1899, for a race to be sailed in 1903.

The New York Yacht Club commissioned Mr. Gardner to design the Irondequoit, built by Wood of City Island, dimensions as

ASPIRANT

Designed by Mr. Gardner and built by B. Frank Wood, City Island, in 1903, for Mr. Addison and Mr. Wilmer Hanan of New York. One of the fastest boats designed by Mr. Gardner, and under Mr. Addison Hanan's handling won practically every race she entered, including the King's Cup, for sloops, and many New York Yacht Club runs. Dimensions—64′ 0″ overall; 40′ 0″ waterline; 11′ 8″ beam; 9′ 0″ draft.

follows: 65 feet overall, 40 feet on the waterline, 12 feet, 6 inches beam, 9 feet draught, and displacement 23 tons.

The Canadian challenger Strathcona, which was designed by Mr. A. E. Payne of Southampton, England, and built by J.

Andrews of Oakville, Ontario, Canada, has dimensions as follows:

59′ 6″ overall.
40′ 0″ load waterline.
13′ 7″ beam extreme.
8′ 4″ draught extreme.

The sail-plans of both boats were of the conventional cutter rig and the design and construction of the boats were a credit to the designers and builders.

A. Emilius Jarvis, who had been the Canadian skipper in all the former Canada's cup races, was again at the wheel; and the American boat was in charge of Captain James Barr, a professional from Long Island Sound.

The first two races were won by the Canadians because Barr and his crew were no match for the crack Jarvis and his seasoned veterans.

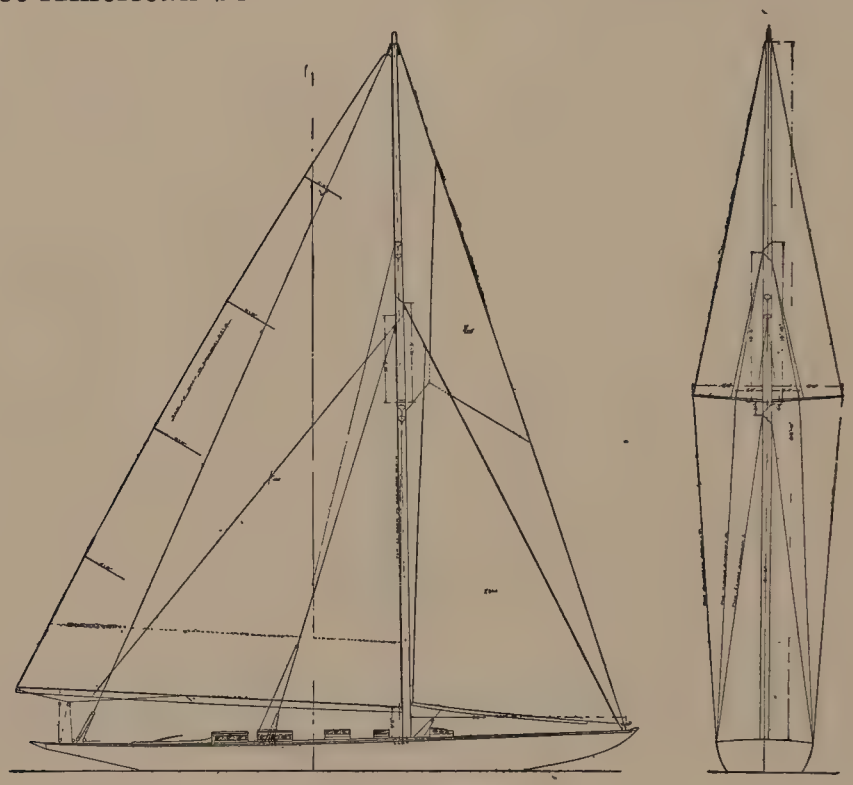
On the morning of the third race, two strange young men were seen to board the Irondequoit. The professional captain was sent forward to look after the sails and two professionals of the crew were sent ashore. At the start the Irondequoit was in the windward berth, and tack, luff, or try any trick that he knew, Jarvis could not get out from under the Irondequoit's lee. The Irondequoit won this race and the two that followed, with the Hanan boys in charge, for they were the two strangers who had boarded the American yacht after she had lost the first two contests.

The next notable prize winner from the boards of Mr. Gardner was the M boat, Gardenia—60 feet overall, 41 feet on the waterline, 12 feet beam, 8 feet draught, and carried about 2,600 square feet of sail under the rule in a cutter rig. She was designed for Mr. A. H. Morris and built by Wood of City Island. Although built as a cruiser, she, under the skilled helmship of the late A. H. W. Johnson, known to all his friends and yachting enthusiasts as Harry Johnson, was a notable prize winner, easily defeating new boats built later to beat her. The record for one season alone was sixteen firsts out of nineteen starts, and the series prize at Larchmont. Gardenia was sold by Mr. Morris to Leo S. Herzig of the Brooklyn Yacht Club and continued racing with Harry Johnson

as her amateur skipper. She was later sold to a Canadian yachtsman and is now used, for cruising and racing, in the fleet belonging to the Royal Canadian Yacht Club of Toronto.

In 1906 the German Emperor presented to the Eastern Yacht Club of Marblehead a cup to be raced for by boats built to conform to the Sonder class rules.

Three German boats were to be sent to compete against three of the best American boats.



YACHT MEDORA

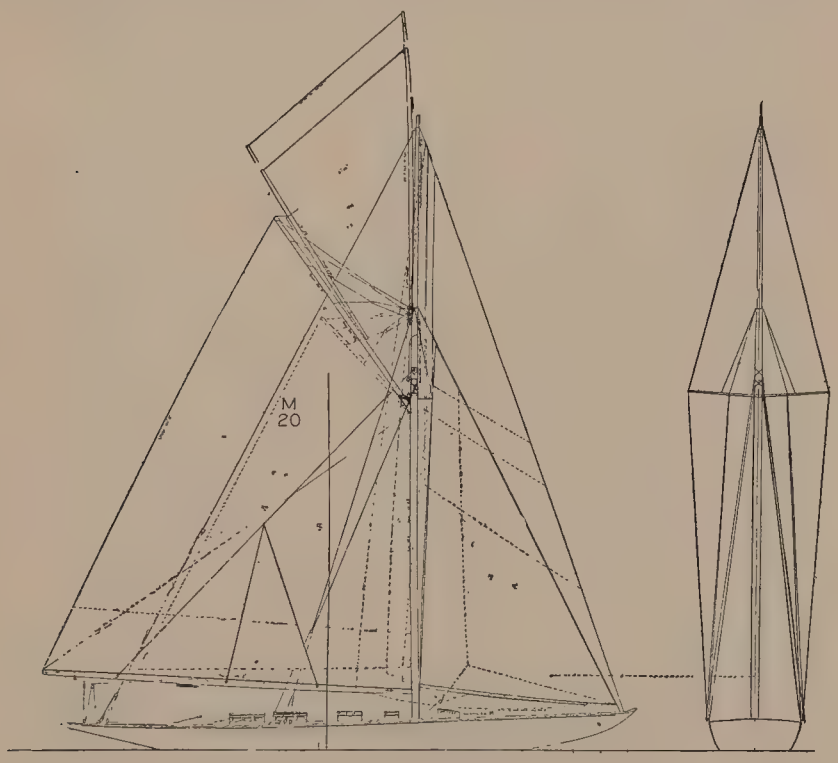
Designed by Wm. Gardner & Co. Marconi mainsail rig

Upon receipt of this challenge from abroad many boats were ordered by American yachtsmen from all parts of the country, and orders were given to the best designers, especially those who had the reputation of turning out fast, small racing boats.

Herreshoff, Crowninshield, Bordman, Burgess, Small, Crane, and others were all represented, some of these designers having orders for as many as two or more boats, all to be of different design.

Gardner received quite late his commission to design a boat, and

he had no time left to make an exhaustive study of conditions or draw elaborate plans, when the late Trenor L. Park of the American Yacht Club of Rye, N. Y., stipulated that he must design no other boat for that race but his, and it was on those conditions that the commission was accepted. The Vim—35 feet, 6 inches overall, 20 feet, 2 inches load waterline, 6 feet, 7 inches beam, 5 feet, 2 inches draught, and with sail-area of the limit of 550 square feet—was built by George Lawley & Son at South Boston, Mass. Captain



YACHT MEDORA
Designed by Wm. Gardner & Co. Gaff and topsail rig

Willis, Mr. Park's sailing master, was the professional aboard; and he was to look after the boat between races, while Mr. Clifford Bucknam was chosen to handle the Vim as the amateur skipper.

It took Lawley less than six weeks to build and launch this boat complete and ready to sail. Although this allowed little time for the intensive trials held at Marblehead, sometimes two and four races being sailed each day, the Vim was chosen as one of the American boats.

In the international race between the team of three German and three American boats all were eliminated but Vim, the winner of the most points, Auk and Wannsee, a German boat.

The records of this first international Sonder Race by places won, and percentage averages (computed by the Massachusetts Y. R. A. table) are as follows:

		1st	*2d*	*3d*	*4th*	*5th*	*6th*	P. C.
	Vim	3	1	–	–	–	–	96
American	Auk	1	1	2	–	–	–	78.3
	Caramba	0	2	1	1	–	–	63.3
	Wannsee	1	–	2	2	–	–	58
German	Tilly	–	1	–	1	1	1	42.5
	Gluckauf	–	–	–	–	3	1	31.5

Windward, one of Mr. Gardner's famous boats, was designed for the Indian Harbor Yacht Club syndicate to defend the Manhasset Cup against the American Yacht Club challenge.

The challenger boat Naulahka was designed and built by the Herreshoffs. Both boats were ordered for this race, which was to be a duel between America's two greatest designers—Gardner and the wizard of Bristol (Herreshoff). The skippers were the Hanan Brothers on the Windward and "Stuyve" Wainwright on the Naulahka.

The American Yacht Club's Manhasset Bay Cup challenger was first afloat and had the advantage of many trial spins before the final races. The Gardner-Indian Harbor boat Windward, although launched later and fresh from the shop with very little time to tune up, won the series in two straight races. The principal dimensions of Windward and Naulahka are as follows:

	Windward	*Naulahka*
Length overall	50′ 7″	50′ 0″
" L. W. L.	32′ 6″	33′ 4″
Beam Extreme	9′ 4″	10′ 0″
Draught Extreme	7′ 0″	7′ 0″
Displacement—Cubic Ft.	319	377
Sail-area	1,235	1,335

Gray Jacket, a Class Q boat, was designed in 1910 for Mr. Floyd Noble of the Atlantic Yacht Club for racing on Gravesend Bay. The success of the Gray Jacket, which was a sure winner in any

Photo by Levick

WINDWARD, A FAMOUS CLASS P BOAT, DESIGNED BY MR. GARDNER IN 1909 FOR A SYNDICATE OF INDIAN HARBOR YACHT CLUB YACHTSMEN

kind of breeze, influenced Mr. Gherardi Davis to commission Mr. Gardner to design another Q boat to be called the Alice, to race against the Gray Jacket and the two Crane boats, Soya and Spider. The Alice, like the Gray Jacket, was a fast boat in any sort of breeze, and after a season or two won several successive

championships. Gray Jacket and Alice were 27 feet, 6 inches on the waterline, and 8 feet, 8 inches extreme beam.

In 1912 the Chicago Yacht Club challenged for the Manhasset Cup and that gave Mr. Gardner another opportunity. He was

Photo by Rosenfeld

Class P boat Michicago at left, now Hayseed IV. The boat at right is the Valiant, now Hayseed V. These boats were designed by Mr. Gardner in 1912 and 1914. Michicago was designed for a Chicago syndicate that was successful in the races for the Manhasset Bay Challenge Cup, taking the cup to Chicago.

commissioned by a syndicate from the breezy city, headed by Com. Fred A. Price and William H. Thompson, to design a Class P boat to be known as the Michicago.

To keep this cup from going to Lake Michigan, several Sound clubs were represented by the P boats, Cara Mia (ex-Naulahka), Windward, Corinthian, and Joyant. The late Mr. A. H. W.

GRAY JACKET

Designed by Mr. Gardner for Mr. Floyd C. Noble. Built by B. F. Wood, City Island, 1910. Was one of the first of the new Q's under the present rule. Was raced in the Q class at Gravesend Bay. Mr. Noble raced the boat under the flag of the Atlantic Yacht Club. Won championship of Class Q, Child's Cup, etc. Dimensions—43′ 5″ overall; 27′ 8″ waterline; 8′ 8″ beam; 6′ 0″ draft.

Johnson, better known as Harry Johnson, was selected to sail the Michicago.

The first race was sailed in a light wind off Greenwich, when Michicago came home first, winning that race and enough of those

that followed to give her the series. The Manhasset Cup, amid riotous rejoicing of the Chicago crowd, went to its new home in the Chicago Yacht Club on the shores of Lake Michigan.

This was an achievement to be proud of, because opposing Michicago were Mr. Gardner's own Windward and three fine new

Photo by Stebbins

MEDORA

Designed by Mr. Gardner for Mr. H. G. S. Noble, then President of the New York Stock Exchange, and an officer of the New York Yacht Club. One of the best boats designed under the present Universal Rule. Fastest boat in Class M. Won many class races on allowance from boats next class up, and New York Yacht Club Fifty-Footers. Also many New York Yacht Club runs. Was sailed in these races by the late Harry Johnson of Larchmont.

up-to-date and up-to-the-limit of the Class P boats, which had been designed and built by the great Herreshoffs. Joyant was an especially noteworthy boat; she had a tremendous displacement on a long waterline and a sail-plan much larger than any other boat

in the contest. Despite this disadvantage, important during light weather, the Michicago showed her superiority.

The sail-areas, displacement, and waterlines of the boats competing in these races were as given below:

Photo by Levick

Schooner Flying Cloud, originally the Radiant—designed by Mr. Gardner in 1913 for Mr. Hendricks. This boat has been a consistent winner and is now owned by Mr. Winthrop W. Aldrich, who changed her to Marconi staysail rig.

	Displacement	*Sail-Area*	*Waterline*
Michicago	384 cu. ft.	1360	33.91 ft.
Windward	319 cu. ft.	1235	32.47 ft.
Corinthian	401 cu. ft.	1423	34.25 ft.
Cara Mia	377 cu. ft.	1303	33.30 ft.
Joyant	440 cu. ft.	1563	35.54 ft.

In 1912 Mr. Gardner designed the Class M boat Medora, one of the finest boats afloat today, for Mr. H. G. S. Noble, of the New York Yacht Club.

Copyright by Levick

Herreshoff's Resolute, designed in 1914, equipped with her original rig. The large single jib is of interest

In 1913 the schooner Radiant, now named Flying Cloud, was designed for Mr. Clifford H. Hendricks and built by George Lawley & Son. Mr. Hendricks sold her, because he wanted a cruising boat and not a racer. The Flying Cloud, since being owned by Mr. Winthrop Aldridse, has won many races and club runs and is one of the most beautiful and admired schooners of the New York Yacht Club fleet.

After three previous attempts to life the America's Cup, Sir Thomas Lipton again challenged for another race to be sailed in 1914. The competing boats, instead of 90-footers under the old waterline and sail-area rules, were to be 75-foot waterline sloops; the allowance time to be under the new New York Yacht Club Rule.

After all preliminaries had been settled an order for the syndicate defender, Resolute, was immediately placed with the Herreshoffs, but the advisability of having at least two American trial yachts was evident, and naturally the honor of designing the second went to Gardner.

Mr. Alexander Smith Cochrane, a public-spirited yachtsman of international reputation, volunteered to build the Vanitie and stand all expenses.

Launched at Lawley's shop early in June, and after a few preliminary trials, Vanitie was taken down to the lower end of Long Island Sound to be prepared for the coming trial races.

The Herreshoff boat, Resolute, had the advantage of a more thorough tuning up and was also fortunate in having one of the best amateur helmsmen in the world at her wheel, Charles Francis Adams, 2d; and her afterguard, too, were men experienced in the management of large racing yachts.

Both Resolute and Vanitie as they appeared prior to the first race created no end of admiration. Resolute was declared a ghost that flew in the lightest of zephyrs, and Vanitie was admitted by all to be the most beautiful yacht ever built. The first race in which these two creations of Gardner and Herreshoff met was off Glen Cove, sailed on Saturday afternoon in a light breeze. Both yachts were well handled, taking every advantage of what wind there was; the result being that Vanitie led soon after the start and won this initial encounter with ease.

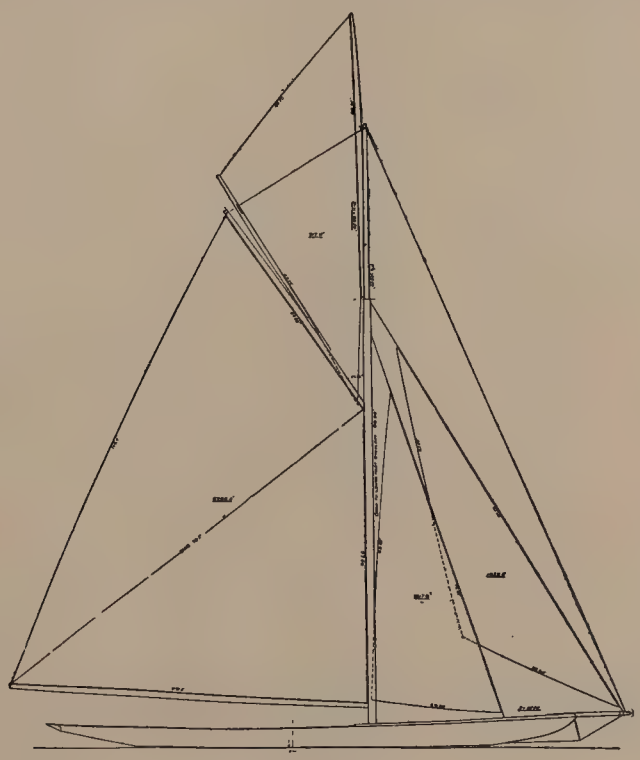
Photo by Rosenfeld

VANITIE

Designed by Mr. Gardner. This beautiful schooner appeals to the yachting public because of the beauty of her lines, the capability and speed of her sailing, the history of the races entered, the skippers who have been at the helm, and of the owner, Mr. Harry Payne Whitney, who is identified with and has done so much for sport.

The World War in August, 1914, put an end to the series of trial races, but in 1920 they were again resumed; Mr. Cochrane kindly turning the Vanitie over to a syndicate, headed by Vice-Commodore George Nichols.

After a number of closely sailed trial races, Resolute was finally chosen to meet the Shamrock IV, which boat she defeated.



YACHT VANITIE

Designed by Wm. Gardner & Co. Rig designed for International Races.

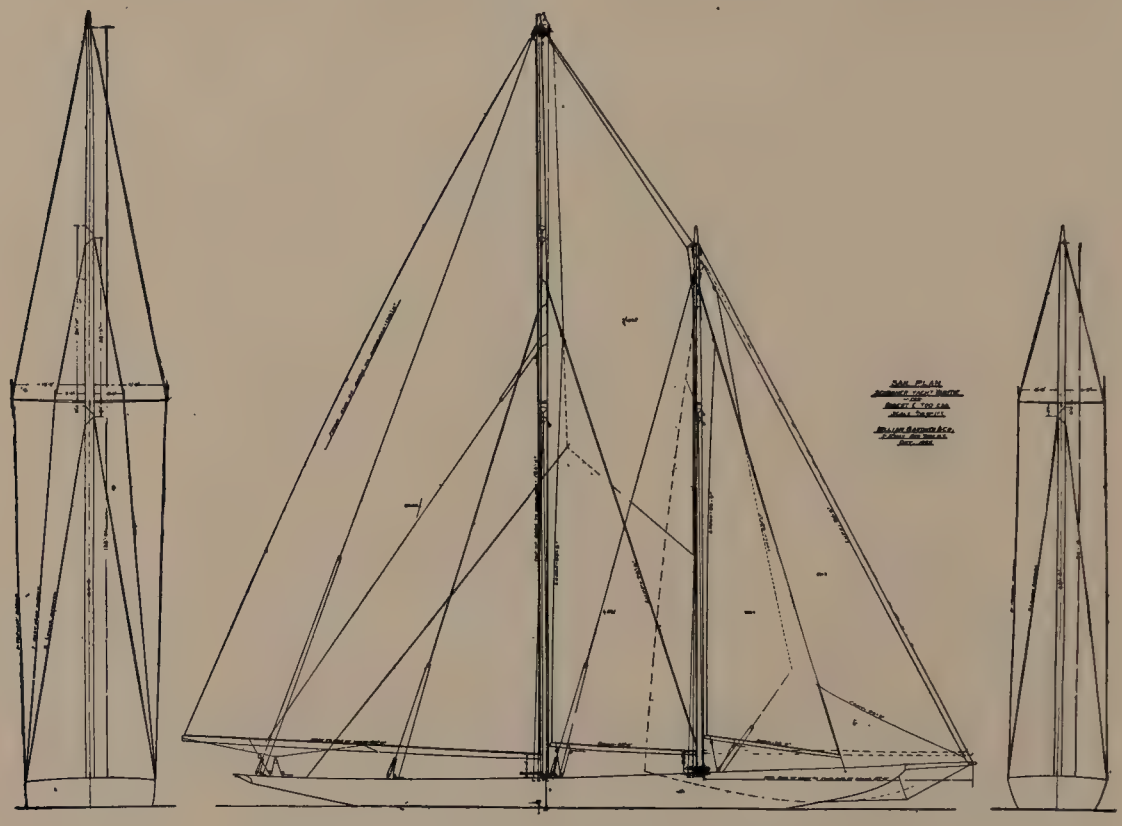
It was not until Commodore Todd purchased Vanitie and the two boats met again as schooners, that admirers of Gardner's boat had another chance to see their favorite in action against a yacht of such perfection as the Resolute.

After the first year of racing with their new rigs, Vanitie had the greater number of victories.

The next year Vanitie was purchased by Mr. Harry Payne Whitney and, after some alterations including a longer main-mast, proved conclusively by the season's races of 1927 that she

could outsail the Resolute, establishing herself as the fastest boat in the world.

The International 6-metre boat races presented another opportunity which Gardner took advantage of when he produced the Grebe, in 1921, for strong winds; and later the Dauphin, for light



YACHT VANITIE
Designed by Wm. Gardner & Co. Schooner rig

winds. Both these yachts bested the other boats in the American team.

In this brief article only his most noted racing sail yachts are mentioned, but Mr. Gardner was always busy on commercial vessels, steam yachts, cruising sailboats, some built abroad—such as the Atyr, designed for Mr. L. Bergman of Russia, and Caramba for a yachtsman in Wiborg. Numerous one-design classes were also covered, such as the Shrewsbury, Islip, Larchmont-Interclub, Stars, Bayside Birds, Southampton, Devon, Larchmond O-boats,

Southport, and Victory classes. Gardner's steam yachts on this side of the Atlantic were famous, and among his most noted steam yachts are the Aileen I and II, Malay, Sylph, Idalia, Parthenia,

Photo by Levick

VARUNA

A Larchmont O-boat designed by Mr. Gardner for Commodore James B. Ford in 1917. The O-boats are fine looking, fast and have splendid cabin accommodations.

Margaret, Aztec, Privateer Elsa II, Coranto, Parthenia, Vergana, Irene, Lydonia I and II, Galatea, and Caroline.

In planning steam yachts Mr. Gardner designed not only the

hulls but the engines, boilers, and all details necessary for the various parts of hull and machinery.

Nothing shows this designer's versatility more than the list of the following merchant vessels for every type and service: the steamer Pennsylvania, tug Delmar, the side-wheelers Hampton, Bridgeport, Board of Health steamers, Lackawanna ferryboats, Entre Rios car ferries, five steamers for the Cuyamel Fruit Co, the Cuyamel steel fruit barges, and two fruit steamers for the Oriental Steamship Co.

In 1925 Mr. Gardner, owing to poor health, retired from the firm that bears his name, and which was always at one address, No. 1 Broadway, New York.

Mr. Gardner has had not only a splendid technical education but a general one that few technical men ever acquire. He is intimately acquainted with the best literature and fond of the music of Chopin, Schubert, Schumann, and Wagner, which he prefers to the more modern composers. The violinist Remenyi was the artist to whom he liked to compare the present-day virtuoso of both the violin and piano.

The same idealism that urges the musician and the artist onward was felt by him for his work, and no design was ever finished until it was as perfect as he could make it. His contention was that a vessel, when made as scientifically perfect as possible, could not be other than beautiful.

To him the sailing yacht was man's most beautiful creation, and the designing of it the finest of arts.

EDITOR'S NOTE.—The author of this paper, Mr. Francis Sweisguth, has from 1901 been closely associated with Mr. Gardner in his great work as marine architect. The editor knows both men well enough to state that the writing of this brief biography was a labor of love on Mr. Sweisguth's part; for to know Mr. Gardner is to love him. The large number of boats intimately described represents but a small portion of the great volume of yacht and ship designs drawn by Mr. Gardner during his long active life. The history of his achievements is, in fact, the history of yachting in America. It is pleasant and thrilling to think of the joy and

excitement of visualizing and developing a boat, from the beginning of the planning to the final completion, and of the satisfaction that must accompany successful trial trips.

There have been other designers, but none so great as Mr. Gardner. His genial personality and his willingness to assist others, coupled with his desire to make available his discoveries of new ideas in boat planning, are in striking contrast to the methods and actions of some other famous designers. It is a great pleasure, to pay this tribute and to express appreciation of the masterful life-work of Mr. Gardner and of his able professional disciple, Mr. Sweisguth.

NORTH AMERICAN YACHT RACING UNION

By Clifford D. Mallory

IT has been said that yacht racing is the "Royal Sport." Whether this expression was used to indicate that only royalty could afford to participate, or because it was intended to give the impression that it is the greatest of all sports, I do not know. That it *is* the greatest of all sports I am sure all participants will agree. To help in bringing it within the reach of the man of average means is one of the purposes of the North American Yacht Racing Union.

Until the fall of 1925, yacht racing was unorganized on the North American continent, although practically all of the rest of the world has been organized for many years, with very satisfactory results. Seeing the need of a central power to bring about uniformity of Measurement and Racing Rules, and to whom appeals from protests and decisions under the Rules could be taken, a group of representative yachtsmen from various sections of the United States and Canada met in New York on November 12, 1925, and there and then created this central yacht-racing body, and gave it the name of the North American Yacht Racing Union.

Its objects are: "To encourage and promote the racing of sailing yachts, and to unify the rules."

Its Constitution is based on the broadest principle of representation, and provides that "each association and district belonging to

the Union shall be entitled to be represented by delegates, one of whom shall be designated to cast its vote at meetings of the Union." Thus, each section of the continent has an equal vote and the control cannot be held by any one district.

The Executive Committee has very broad powers, including passing upon applications for membership, appointment of officers and committees, framing Measurement and Racing Rules, determining what additional associations and districts shall be recognized, and passing upon questions relating to the racing rules which may be referred to it. This tends to make the operation more wieldy than if such matters had to be referred to the delegates for action.

In the two years the Union has been in existence much progress has been made. Whereas, there were considerable differences throughout the continent in the rules, or in their interpretation in 1925, today there is practically perfect uniformity.

A Special Committee conferred with the Permanent Committee of the International Yacht Racing Union in February, 1927, in London, for the purpose of discussing slight modifications of the International Rule of Measurement, which rule has been used by practically every nation of the world for some years. This committee's suggestions were received in a fine spirit of sportsmanship and were adopted. Thereupon, on April 30, 1927, the N. A. Y. R. U. adopted the International Rule of Measurement for 6-, 8-, and 10-metre classes, and on November 18, 1927, for the 12-metre class. Yachts have been or are being built to all of these classes for racing in American waters.

The adoption of this rule does in no way conflict with the building and racing of yachts under the Universal Rule of Measurement which has been in effect in this country for many years. The Measurement Rules Committee of the Union have studied, and are still studying, the latter rule very carefully, to see if anything may be done to improve it. They have prepared scantling tables for all classes, a thing which is badly needed, as at present no scantlings are provided for classes above 31 feet rating.

When this is adopted yacht owners can feel that they will be well protected in placing orders for new yachts under either the

Universal or International Rules. All racing yachts will then have to be built to certain scantlings and under the supervision of a Classification Society, thus assuring the best materials and fastenings, and good construction.

Racing rules have been given most careful consideration by the Committee having such matters in charge, and many suggestions have been received with reference to changes in these rules. From the suggestions and discussions which ensue, there probably will develop something that will be of constructive assistance, and changes may be made. In the meantime the Committee feel that their first effort should be to establish uniformity throughout this continent, and that they should not recommend any change until sufficient time has elapsed for all sections to have at least one season of racing under the same rules. The Committee has answered many communications making inquiry as to their interpretation of many of the rules, and have assisted Race Committees in various sections in matters relating to their duties.

N. A. Y. R. U. meetings have been held in New York and Chicago, and a meeting will be held in the spring of 1928 on the Pacific Coast. Thus an opportunity is given those members and delegates, who are so far removed from headquarters as to make it difficult to attend meetings in New York, to participate in the Union's activities.

This is an organization which is primarily advisory, and is to function for the purpose of discussing matters and problems of material interest to yacht-racing men located in all parts of the North American continent. The Union is a vehicle for the development of ideas of the continent as a whole and desires requests for advice or assistance, and solicits suggestions and constructive criticism.

The N. A. Y. R. U. has been asked to forward a challenge for the Scandinavian Gold Cup, which will be raced for by 6-metres in Sweden in the summer of 1928, and to enter a 6-metre and an 8-metre in the Olympic Games, which will be held in Amsterdam this coming summer. This is the first time this continent has been able to act through its governing body in this sport in matters of this kind, and undoubtedly most all international matters pertain-

ing to yacht racing will hereafter be handled by the N. A. Y. R. U. The Officers and Committees for 1928 are set forth herewith:

President	C. D. Mallory	New York
Vice President	Geo. H. Gooderham	Toronto
Treasurer	Fred D. Porter	Chicago
Secretary	Jas. W. Alker	New York
Recorder	W. P. Stephens	New York
Corresponding Sec.	Ernest Stavey	New York

Executive Committee: The Officers Ex Officio

Ernest Lee Jahncke	New Orleans
Joseph V. Santry	New York
B. Rey Schauer	Los Angeles

Measurement Committee:

W. A. W. Stewart, Chairman	New York
Clinton H. Crane	New York
Francis H. Early	Chicago
Robert W. Emmons, 2d	Boston
Geo. H. Gooderham	Toronto
Philip R. Mallory	New York

Racing Rules Committee:

C. Sherman Hoyt, Chairman	New York
W. P. Barrows	Rochester
Samuel Dauchy	Chicago
Johnston DeForest	New York
Frank C. Paine	Boston
B. Rey Schauer	Los Angeles

EDITOR'S NOTE.—Mr. Clifford D. Mallory has accomplished a great deal for yachting by his fine work in the N. A. Y. R. U., of which he is the President. All boat owners should aid him in this work and give their support and approval by joining the association. We all rather casually refer to Universal and International Rules, without knowing exactly what they mean and how important they are. A large percentage of the ill-feeling that exists between yachtsmen on different sides of the ocean, with the added difficulty of facilitating international racing, is due to the clashing that exists in the two rules. In order to present to you a perfect under-

standing of what Mr. Mallory is doing to remedy the conditions, I am fortunate in being able to quote in full a paper by Commodore Clinton H. Crane, published this year by the *Boston Evening Transcript*, which runs as follows:

"Measurement rules, although a dry subject, are of vital interest to all yachtsmen who engage in racing, and the proceedings of the International Conference on yacht measurement, held in London during February, are of especial importance to Americans.

"The conference was called to meet a committee of the newly formed North American Yacht Racing Union for the purpose of agreeing, if possible, on certain modifications of the international measurement rule which might make it more suitable for weather conditions in the United States, with the idea of adoption by the North American Union of three international classes for the purpose of stimulating international racing.

"At this conference, in addition to Great Britain, Scandinavia, France, Holland, and Italy were represented by delegates.

"There are at present four international classes, namely: six, eight, ten, and twelve meters, which have been built into by all the countries represented and have furnished excellent sport. These international classes are by no means the only classes which are now racing on the other side. The British, Scandinavians, French, Italians, etc., all have their own special classes, but in international competition they have practically all agreed on one rule. A six-metre boat can race in England and Norway and in the south of France, and it has been a great thing for yachting to be able to send one's boat from place to place and find a class in which to race. I do not for a moment believe that these international classes should be our only classes. We have in existence too many fine racing boats built to the universal rule, and for those who enjoy experimentation I think there is no doubt that universal rule still presents a most interesting problem as to the largest yacht which may be driven with the smallest amount of sail.

"To fit the international rule to American conditions, our designers, after conference, made eight suggestions. With the exception of a suggestion which involved a rather radical change in the international formula, the American suggestions were all

favorably received and in principle adopted. The technical advisors of the conference were the leading naval architects of Great Britain and the Continent and they suggested in several cases different means of accomplishing the end our suggestions had in view. I have no hesitation in saying that the end has been better attained as a result of the collaboration of these experts than if our suggestions had been adopted verbatim. The purpose of our suggestions may be briefly stated as:

"1. A limit set to the tax on full bows to make it inadvisable to go to extremes such as were successful in the Lea and Rominey for our light weather Sound racing.

"2. An upper limit on freeboard so that there would be no premium on building a boat of excessive freeboard which might be successful in light weather where additional sail is allowed for each additional unit of freeboard.

"3. The height of sail plan which had been limited as a function of the waterline length, was changed to make the height a function of class. In other words, each class is to have a set height of sail plan. This, by the way, is almost exactly what happens in our universal rule, where the height of masts of the R's, Q's, and P's, etc., are practically constant in each class.

"4. Centre boards are to be permitted under the International Rule under restrictions yet to be drafted.

"5. Hollow masts are to be permitted.

"6. Measurement of sail plan is to be virtually a spar measurement as under American Rule.

"7. Cabin house restrictions were added for the eight metre class. The eight metre class will not vary greatly in size from our Q class, though being slightly smaller.

"8. Rotating masts are not allowed.

"Our suggestion as to the elimination of the girth and girth difference measurement as being unnecessary and tending to make measurement more difficult, was shelved for the present, as no change in the basic formula could be made without three years' notice.

"In giving this brief summary of what was accomplished I must add a word as to the profound impression which was created

on the American visitors by their reception at the conference. Frankly, I had not been at all sanguine of being able to persuade so many different nationalities to agree to changes which might seem to reflect on their wisdom as rule makers, but we found an almost unanimous agreement on the part of the technical advisors that our suggestions were for the benefit of the sport. It has been said many times that one of the greatest objections to joining an International Conference was the great difficulty of making any changes in a rule once adopted, the old argument against 'entangling alliance.' Our experience in this conference, with the calibre of the men who acted as technical advisors, leads me to believe that any fair and reasonable change is more easily accomplished with such a group of men than in smaller and more isolated communities. It seems to me a most extraordinary thing that we should have been able to go to London and criticize a rule which had been developed abroad and not to be met with immediate antagonism."

SAILS

By Edwin J. Schoettle

THIS brief paper presents the merest outline of the history of sails, and is illustrated by a few sketches to show their evolution and development.

The always prevalent amateurish desire to construct models of boats, now becoming even more popular, and the necessity in the early days of boat building to make models, in advance, to determine the lines, and sailing qualities of the contemplated craft, has left us replicas of the boats of long ago. Besides this avenue of approach for knowledge on the subject, we have the work of artists. There are many reasons why these two sources are sometimes in error and not reliable. The models were most often built by common sailors, without technical knowledge, or were fashioned out by craftsmen more anxious to make an ornament than an authentic ship model. Further, the boats which artists thought necessary in their pictures, to complete the composition, were put there more for artistic effect than for faithful reproduction of their lines and sails. Also, many of the older engravings and etchings, and especially those of American origin, have been from time to time copied, and when this was done more modern sails were introduced by the artist making the copy.

Fortunately there are many perfect replicas of old boats in models that are available today, and in the work of many artists which give us quite a substantial amount of authentic knowledge concerning the character of craft of the past. In this respect, the most important bit of history on the subject has come to light through the uncovering of Tut's tomb in Egypt. In the daily press of today we find photographs of actual models of the larger type, and of the smaller boat, that were put in the tomb three thousand years ago. It is safe to assume that these are faithful reproductions of the ships that were in regular use at that time, and for this reason their discovery furnishes an important link.

It is interesting to note that the lines of these boats differ but little from the lines of the Eskimo canoes, the history of which we have no way of determining.

Ships are built to overcome the forces of nature. Originally their main object was to float, but later the reason for existence was extended to furnish means of transportation. In the primitive

ESKIMO—UMIAK

This is known as the woman's boat. The hull is constructed by stretching a covering of seal hide over a framework of whale ribs or of driftwood. The sail is made of seal intestines carefully sewed together, and is fastened with straps of deerskin.

days this was done by poles, oars, paddles, and sweeps. It must have been soon apparent that boats were easier to propel with the wind than with the wind in an opposite direction. This line of reasoning, of course, led to the use of sails, and for many centuries these were simply square pieces of matting or canvas fastened in any old crude manner to an upright spar we now call a mast. No one can comprehend what a vast number of different types of

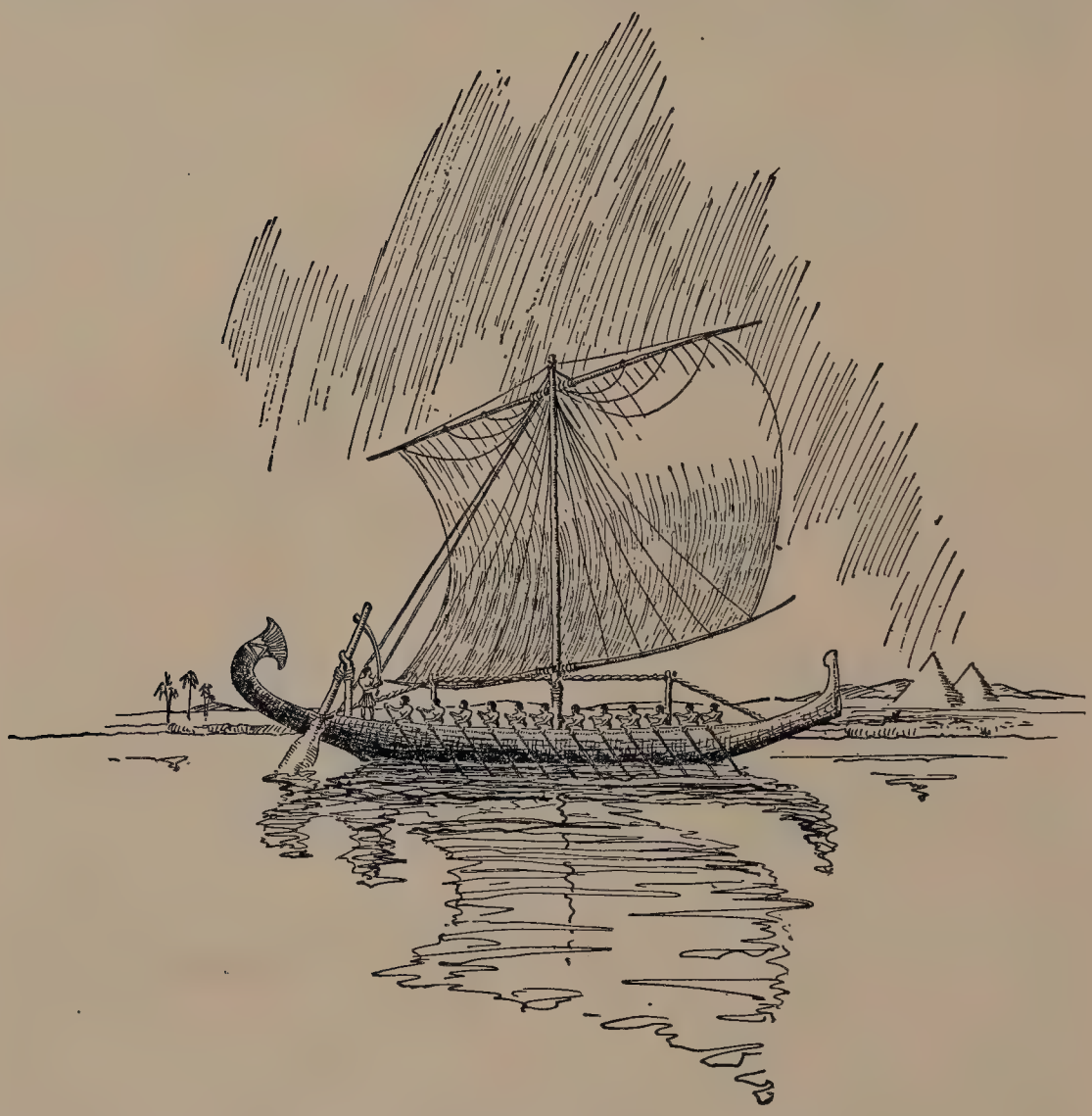
boats have been developed since the Stone Age and the days of the hollowed-out log.

All through this long period, craft of many sizes and shapes were built, and of these we think with admiration, and visualize them as things of beauty as well as utility. Even the crudely fashioned square sail, as pictured on a Greek vessel of the time of the begin-

ning of the Christian era, makes a charming picture. The rounded lines caused by the wind filling the sail, and the driving power thus obtained, make one observe that in sailboats efficiency is beauty. L. G. Carr Laughton, in his introduction to E. W. Hobbs' admirable book, *Sailing Ships at a Glance*, mentions this, and from him I quote: "There is an æsthetic appeal in the grace of form which was their outward symbol of efficiency, in the symmetry of their rigging, in the lights and shades of their swelling canvas, and in the profuse ornamentation to which they readily lent themselves." Mr. Laughton, like all those who love sailboats and the sea, deplores the fact that steam has robbed the sea of its charm. I am pleased to agree with him, but as this is meant to be a history of sails, and at that a brief one, it would be wise to return to my subject.

Until recently hulls of boats were designed and built long before

it was decided what kind of sails they were to be equipped with. During the past 100 years hulls and sails have been considered from the first moment of design, and each one thought out and planned to work to advantage with the other. Without this co-or-



dination, the present development of sailing craft would have been an impossibility.

The history of sails has for its beginning those used by the Egyptians. These were oblong, and were made fast to two cross spars, located at top and bottom of sail, these spars in turn lashed

to the mast. The boats were steered with a large sweep, lashed on deck instead of rudders, and in them long trips were made on the Mediterranean and down the coast of Africa. The propelling of these strange-looking craft was made more effective by the use

Viking Ship

of many large oars. Under favorable wind conditions these oars were auxiliary to the sails, but under adverse wind conditions the sails were probably lowered and the boats rowed. This latter is said to be true of the way of handling them during naval engagements with enemy ships. The Roman and Greek ships were more stoutly built, and were equipped with deadly looking stems for use in war.

The Viking ships were probably the most seaworthy and reliable of all early craft. The uncovering of a fine specimen of these sturdy boats, that had remained buried in Norway for centuries, gives us an authentic idea of what they were like. Again, we have the square sail with a hull resembling somewhat our present-day gasoline-driven and clinker-built fishing boats.

The English ships of the so-called dark ages were very similar to the Viking and Norse ships, but those used by the Crusaders in the thirteenth century began to show some outstanding developments; the rudder took the place of the sweep, and the sails, sometimes three in number, were decorated.

During Columbus' time sails and ships made great strides. The Spanish and English ships were not unlike in appearance, having

SANTA MARIA

three masts, sails on each, and even topsails on the centre mast. Hulls were built with bowsprit, forecastle, quarter-deck, high freeboard, and many developments heretofore unknown.

An old print in the British Museum shows us the character and decoration, so much a part of their appearance, of the ships of Queen Elizabeth's time. During the Elizabethan Age, with its

SPANISH SHIP

great achievements in literature, arts, and sciences, boats and their sails made equally important developments that made possible the great sea trips and discoveries of Cabot, Drake, Frobisher, and many other seamen of the age.

One striking ship, the Ark Royal, of which we know about in detail, and which was built for Sir Walter Raleigh, and later purchased by Queen Elizabeth, was rigged far ahead of her time, and

AMERICAN CLIPPER SHIP

equipped with four masts. This was a grand-looking and majestic ship. She had a more than generous amount of freeboard, open stern, and quarter galleries, and was equipped with many guns located at different levels. Square sails were used on the three forward masts, named foremast, mainmast, and main mizzenmast; and the aftermast, quaintly at that time called bonaventure miz-

zenmast, was rigged with a lateen sail. This Ark Royal took a prominent part in defending England against the Spanish Armada, which at that time was the world's finest fleet of sailing vessels.

The Armada was made up of boats of many sizes, shapes, and descriptions, and all highly decorated and gilded with sails painted with the pictures of the saints after whom they were named.

Nearly all the European nations at this time took part in the rapid development of boats, and among them we find the Dutch, with Hudson's Half Moon, and the French with well-constructed and speedy fighting ships. The opening up of the Far East, and of the Pacific Ocean was the main reason for the building of better and more seaworthy ships that were able to stand the long ocean voyages. At this time the East India Company was formed, and

Schooner—Marconi Mainsail, Gaff Foresail

Marconi Rigged Sloop

KETCH

their strong and cumbersome ships laboriously travelled the long distances to the Far East.

In the eighteenth century the French made important strides in designing and rigging of their fighting ships. On these boats we

TYPICAL AMERICAN CATBOAT—GAFF SAIL

find many more sails: three square sails one above the other on the two forward masts, and a more or less regular gaff sail on the mizzenmast. The design of these hulls was changed, making them much lower, and eliminating the high structures that were formerly put at both ends of the early vessels. One of the French boats, The Terrible, was captured by the English Fleet in 1747, and was

American Catboat with Swedish Rig
Note the short gaff

used by them for a model, thus influencing the same changes in the English vessels of the day.

During the latter end of the eighteenth century, we begin to see the modern fashion creeping into the appearance of sailing ships.

The English ship Victory, Admiral Nelson's flagship during the famous battle of Trafalgar, and the much more graceful American ship Constitution (affectionately called "Old Ironsides," and still afloat) are the outstanding examples of the ships of the period.

GAFF-RIGGED SCHOONER

On these we find great clouds of square sails, one above the other on all three masts and numerous jibs.

In the forties and fifties of the nineteenth century sailing ships saw their greatest development in the American clipper ships. One cannot think without a thrill and a feeling of pride of these,

with their great billows of sails and masts of tremendous height, rigged to hulls well designed and capable of speeds of fifteen knots or more. Their passing marks the end of commercial sailing vessels.

It can, therefore, be said that the long history of sails made for war and commercial purposes had its ending at the time of its greatest development—the Civil War in America, and the advent of steam power being the principal reasons.

SCHOONER—MARCONI STAY-SAIL RIG

We now come to pleasure yachts, the fore-and-aft schooners that might well be said to be typically American. By the expression fore-and-aft, we mean sails fastened to the masts at the sail's forward edge, thus making the boat so rigged capable of sailing much closer to the direction of the wind, and at the same time of being handled with smaller crews, because all sails are raised and lowered from the vessel's deck. During the past seventy-five years the sails on sloops, yawls, catboats, and dozens of other types have been developed, until we come to our present most capable rigs, most of which are shown in the sketches accompanying this paper.

THE AËRODYNAMICS OF YACHT SAILS

By Edward P. Warner and Shatswell Ober

Editor's Note.—It is regrettable that this admirable paper could not have been reprinted exactly as presented in 1925 to the Society of Naval Architects and Marine Engineers. Messrs. Warner and Ober in a very scientific manner entered an unexplored field for research work and their experiments produced results that are of great value to marine architects and sailors.

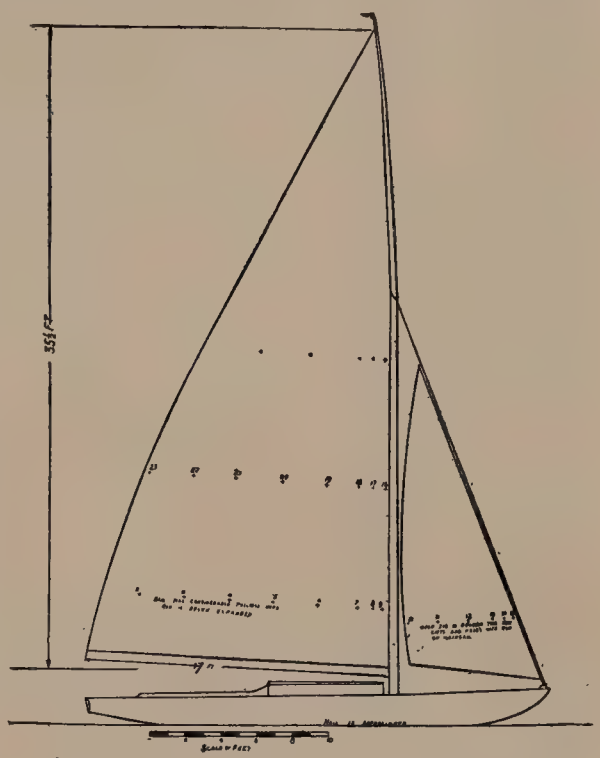
Historical Summary

THE work described in this report is the outgrowth of a series of wind tunnel experiments on sails made at the Massachusetts Institute of Technology from 1915 to 1921 and of sundry attempts on the part of the writers to find relations between the performance of sails of a yacht and the wings of an airplane. The work was done in the summer of 1923, being under the direction of the writers with the assistance of Messrs. John R. Markham, W. Laurence LePage, and James B. Ford. The yacht for the full-scale experiments was furnished by Mr. John S. Lawrence. He and Messrs. Livingston Davis, W. Starling Burgess, and others aided greatly in the course of the work through their experience and interest. The Marconi-rigged S class yacht Papoose, the sail plan for which is shown in Plate 1, was used in all the full-scale experiments. The yacht was fitted with racing sails of the usual cut, the leach being made as flat as possible. The mainsail ran up the mast on a track, and therefore pulled off from the centre of the mast at all times instead of being free to swing around the spar as it could if it were on hoops.

Experimental Methods

When the work was first started a number of possible directions of attack presented themselves, as the field has been but little explored. Among the general types of investigation considered

were the study of the pressure distribution over the sails; the direct study of air flow; the measurement of the form assumed by the sail when the boat was underway; the measurement of tensions in standing and running rigging and of the pressures on the restrained ends of spars; the analysis of the motion of the boat through the air and through the water by taking simultaneous and separate measurements of the relative motion of the air and of the motion of the water past the boat; and the determination of the attitude assumed by the boat when underway, with particular reference to the angle of heel. All of these would be proper subjects of researches which should have valuable results; but it was decided that the first series of experiments should be limited to pressure distribution and air flow studies. An attempt was made to measure sail form as well; but the apparatus first designed for the purpose proved inadequate, and that phase of the work was abandoned.



AËRODYNAMICS OF YACHT SAILS
Plate No. 1—showing location of pressure points

The necessity of apparatus to make these tests and to record results caused the introduction of new devices that show the result of study and hard work. In order to get pressure distribution on the sails, a multiplicity of perforations in the sails was connected by rubber tubes to the elements of a multiple-pressure gauge. The reading of the gauges was done by photographic means which was made possible by the stillness of the water and the lack of motion of the boat as the experiments were made on the Charles River at Boston.

Details of Pressure Distribution Apparatus

The apparatus for getting the distribution of fluid pressure on a moving object or surface is necessarily made up of four parts, the pressure openings, the connecting tubes, the sensitive gauge, and the recording mechanism, listing them in the order in which they are affected by a change of pressure intensity. The four are almost entirely independent, and can be considered quite separately.

The pressure openings in a sail present a problem much more difficult than those in an airplane wing surface, because a sail is single-surfaced and there is no space for the housing of the mechanism inside of the structure. It must all be left in the open, and the best that can be done is to keep one side of the cloth, the side on which pressures are actually being received for recording, smooth and free from interference.

The first set of readings was taken with pressure points consisting of patches of heavy canvas sewn on the side of the sail opposite to that to which the orifice was open. These patches, about two inches in diameter, contained grommets to which short elbows of copper tube were soldered, and holes were punched through the sail in direct register with the grommets. The pressure at the orifices thus formed was transmitted through the elbows. The connection between the sail and the canvas patch of course had to be air-tight.

This form of opening was difficult to make accurately and gave some trouble, the registry between the grommets and the orifices being very poor in some cases and the holes fraying at the edges. Furthermore, although an attempt was made to stick the sail and the patch together with shellac, they pulled apart, in a number of instances, so that the sail puckered or wrinkled in the immediate neighborhood of the orifice. When that happened the plane of the opening was no longer parallel to the normal flow of the air, and there was danger that the pressure indication might be modified in either direction by a certain proportion of the dynamic head.

Calculation of Results

The plates from the gauge camera, when developed, showed images of the gauge, with more or less clear indications of the

menisci in the several tubes. The clarity of these indications depended on the nature of the lighting, the steadiness with which the gauge was held, the steadiness of motion of the boat, the steadiness of the wind (these last three factors affecting the rapidity of the movement of the liquid in the tubes), the duration of exposure, and the care with which the plate had been developed. No plate was considered usable unless definite measurements could be made for at least three-fourths of the menisci, and about three-quarters of the plates taken came up to this requirement.

It is known that air pressure, when hydrostatic pressure, is transmitted equally in all directions. The only direction in which the dynamic pressure does not act is the one at right angles to the pressure surface; therefore it is essential that for a true measurement of static air pressure the surface must be parallel to the direction of the air flow. The readings of the multiple gauge were recorded photographically and in that way accurate, and much more important, absolutely simultaneous readings were gotten and recorded.

The measurements being obtained, they had to be reduced to a common basis, as it was considered unsafe to depend on a single plate. At least three, and usually four, good records were secured for each condition of the sails and each point of sailing under investigation. To accomplish such reduction, the average of the absolute heights (neglecting sign) of all the liquid columns was found for each plate. The ratio of the height of each individual and the average of all the ratios obtained for a given condition of sailing and a given column on the various plates was taken. The plotting of these average ratios gave a direct mean of the results for the several plates, quite independent of any differences in wind velocity at the times when the various records were taken.

Discussion of Precision of Results

The estimate of probable error in such work as this, where there is such a variety of variables of uncertain effect, is exceedingly difficult; and it is necessary to follow very much the same line that is standard when a single measurement, involving and depending on only a single variable, is being made, taking the mean deviation

from an average of several results obtained at least nominally under the same conditions. By the theory of the precision of measurements, the mean deviation divided by the square root of the number of observations used in finding the average is equal to the probable overall error in the final average. The mean deviation was quite remarkably constant for all points at close to 0.09 times the pitot-tube head. Since the plotted points in most cases represent the average measurements from four plates, the probable error as defined above was a little less than 5% of the standard unit of dynamic pressure. Of course many factors materially altering results are present and must be taken into consideration and compensated for, before the results can be said to represent actual conditions. Chief among these are: No. 1—Angle of heel; No. 2—Windspeed; No. 3—The altitude of the boat with respect to the wind. However, the results have been mathematically averaged, and it seems unlikely that the error in any case can exceed 10% of the total reading of the multiple gauge. The results, therefore, can safely be relied upon to represent faithfully the broad underlying facts which have come to light.

Discussion of Results

All the work was done while sailing close-hauled. That point of sailing was considered to be of most interest aërodynamically; and it was also very much easier to treat experimentally than a reach or a run would have been. Air pressures are, of course, proportional to the square of the velocity of the wind relative to the boat, which is only slightly inferior to the sum of the true wind speed and the speed of the boat when on the wind, equal to their difference when running. The absolute pressures would be only about one-tenth as large when running as when going to windward under the same conditions, far too small to be measured with any accuracy.

Furthermore, results show that all pressure intensities increase near the luff. The pressure falls off rapidly towards the leech, on the other hand, and in most instances reaches a value near to zero at the last row of points.

This is the first significant conclusion from the tests. It is in strict accordance with what would have been expected from air-

plane experiences, for it is a fact familiar to all students of aërodynamics that the maximum pressure on any wing or inclined surface is found very near to the leading edge, and that it falls off rapidly on going back along the chord. In fact, for reasons to be explained later, the rise in pressure intensity near the leading edge of a wing is even greater than that near the luff of a sail

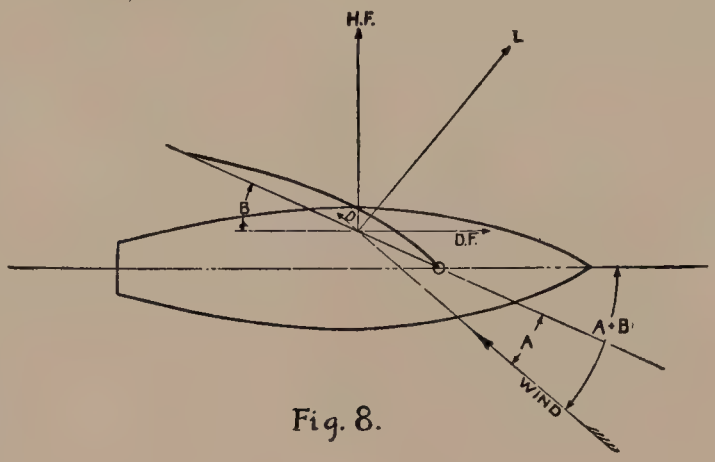


Fig. 8.

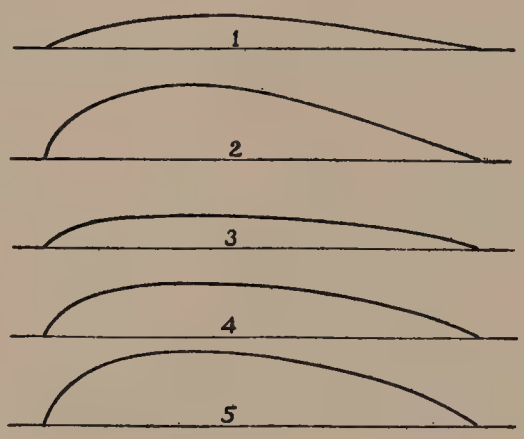


Fig. 9

AËRODYNAMICS OF YACHT SAILS
Plate No. 7, Figs. 8 and 9

The importance of this concentration of pressure near the luff becomes doubly apparent on considering in detail the mechanics of the process bywhich the pressure on a sail drives a boat to windward. The pressure of the air against a sail at any point has two components, a force acting perpendicular to the surface of the sail, and a small frictional drag parallel to the surface. The second of these components being insignificant by comparison with the first, it can be neglected; and the resultant force at every point, whether it originates as a positive pressure on the windward side or a suction on the leeward side, considered to act exactly perpendicular to the sail at that point. This resultant can then be resolved into two forces, one perpendicular and the other parallel to the axis of the boat. Obviously, only

the second of these components has any direct effect on the driving force.

The resolution is shown graphically, for three points on a typical section of a sail, in Fig. 6, Plate 6. It is evident from the drawing that the curvature of the sail makes the forward component of force, parallel to the boat, very small, if indeed it is not actually negative, for those parts of the sail near the leech. Practically all the driving force must be obtained from the portions in the immediate neighborhood of the luff, where the forward component is relatively large. The remainder of the pressure has little direct effect, except to assist in the making of leeway. It is then very desirable that the pressures should be increased as much as possible near the luff and decreased near the leech, as they are far more useful in the former position than in the latter.

It must not be understood from what has been said that the form of sail shown in Fig. 6 is necessarily a bad one, or that it could be improved by cutting away bodily a part of the cloth near the leech and reducing the distance across the sail. The leech of a sail, like the trailing edge of an airplane wing, acts to guide the air away from the forward part and so to improve the efficiency of the surface as a whole. If the rear part of a sail were to be removed then obviously those pressures of small intensity and of little direct use for driving the boat which it now shows would be transferred to points farther forward on the sail. It is relative, not absolute, distance with which we are concerned, and if the rear half of a sail is ineffective it may be presumed that the rear half of the new form would still be ineffective if the present sail were to be reduced in breadth by cutting away the leech.

Mast Interference

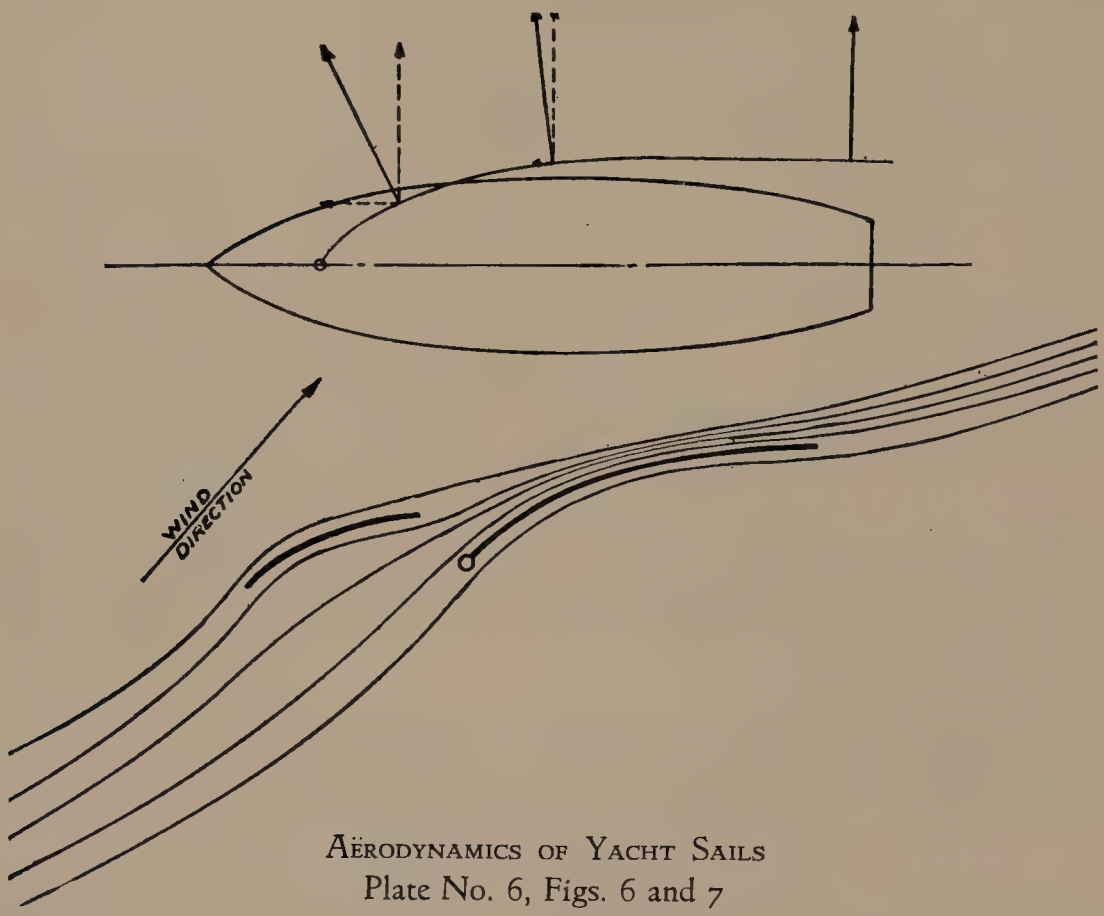
The second striking conclusion is the result of interference between the mast and sail. It has been found that both the pressure and the suction fluctuate near the luff of the sails. Immediately behind the luff there is a high suction and low pressure. A little further back the suction drops off abruptly and the pressure rises, and still further from the luff, about one-fourth of the way across the sail, the suction comes up to a peak once more,

while the pressure falls off to a minimum value at the same point. This is easily accounted for by mast interference. The mast, not being streamlined at all, disturbs the flow of air very badly. There is, therefore, a region of irregular and eddying flow behind the mast, and this extends onto the luff of the sail. It gives a high suction on the leeward side, for the air flowing around the mast, and failing to "close in" after passing it, creates a region of dead-water when the pressure is below the normal atmospheric value. On the windward side, on the other hand, the discontinuity of flow prevents any direct impact of the air against the sail or any streamline flow along the windward side. The pressure is accordingly low. After the air has flowed a few inches beyond the mast it assumes again a streamline flow on both sides of the sail, and it is after the assumption of this steady and smooth flow that the second maximum of suction is built up. The intermediate minimum is accounted for by the direct "impact" on the leeward side of the sail of the particles of air which are just closing in after having flowed around the mast. Those particles tend to strike against the sail on each side before being straightened away in their streamlines with a reversal of curvature in their paths, and the result is, of course, an increase of pressure and a reduction of suction. Going still further back, the maximum of suction which has always been explained is found. Thereafter the suction falls off steadily in the same way as on a wing.

The mast interference undoubtedly accounts for that shaking of the sail near the luff which ordinarily gives to the helmsman his first warning that he is pointing too close to the wind. The sail shakes only when the sign of the pressure on at least one side of the sail has been reversed and the intensities have changed so that there is more pressure on the leeward than the windward side, or, alternatively, more suction to windward than to leeward. After the sail has once begun to flutter, the form is disturbed so that the smooth flow over the portions farther back from the luff is broken down. It seems quite likely that the furnishing of a certain amount of rigidity to the sail near the luff, sufficient to prevent extensive shaking at that point, would enable a given boat to point higher than is now possible. The use of a number of short battens

along the luff might offer some possibilities if they could be made flexible enough not to interfere appreciably with the reversal of curvature of the sail when tacking, but the mechanical problem of their design with just the right proportioning of flexibility or stiffness would be an awkward one.

The importance of the leeward side of the sail is obvious. The maximum intensity of suction on that side is more than twice the



Aërodynamics of Yacht Sails
Plate No. 6, Figs. 6 and 7

maximum pressure on the windward side. Not only is the maximum suction greater than maximum pressure, but it is found at a more useful point. The pressure falls off comparatively little towards the leech of the sail, but, as has already been shown, the leech is ineffective in producing driving force. On the leeward side, on the other hand, the suction on the sail is localized where it will exert the maximum of power in pulling the boat ahead.

Plates 3, 4 and 5 in the original paper (which unfortunately cannot be reproduced here) showed interesting divergence in the form of the curves in the sail near the leech. In one case the curves turned upward to increased absolute values, in the other not. The apparent reason is that when the first series of tests was made the battens were out of the mainsail, and the leech bent over and acted as a "flap-gear" acts on an airplane wind, to "bank up" the air in front of the crease. This decreases the rate of air flow over the surface, of course increasing the pressure to windward. The suction to leeward is increased at the corresponding point (actually on the bent-over part of the sail) because the air flowing past does not readily accommodate itself to the crease and tends to go straight on and to drag with it the dead air which lies behind the leech. This phenomenon, somewhat similar to that appearing behind the mast and held responsible for the high suction immediately adjacent to the luff, produces a high suction back of the crease in the sail. These forces near the leech are of little use, however, as they act perpendicular to the surface of the sail and the sail is creased over approximately perpendicular to the axis of the boat. The air forces are therefore directed straight backward and act as a negative driving force, which must be overcome by the positive force near the luff. Theory thus confirms what every yachtsman knows from practical experience: that the sail should be so cut and that such an arrangement of battens should be used as to insure the smoothest form possible close to the leech and to avoid any disturbance or retardation of the air flow in that neighborhood.

Pressure on Jib

One of the most striking features of the results of the pressure distribution tests is the difference between the pressure intensities on the mainsail and jib, unknown to most sailors. It will be observed that the curve of suction on the leeward side of the jib lies so far above all the mainsail curves as to appear to have no relation to them, the actual ratio of the maximum intensities of suction on the two sails being 1.75. The difference in positive pressures is much less marked, the values on the jib being about the same as the highest obtained on the mainsail.

The relatively high performance of the jib is due in part to the high aspect ratio, or ratio of height to breadth, but it is probably that a much more important factor is the absence of any mast interference. Whatever the cause, however, there is no doubt as to the result. Leaving out of consideration entirely the effect of the jib on the mainsail, which will be reviewed later, and considering the two sails as contributing separately to the driving force, the jib furnishes more than twice as much force in proportion to its area as does the mainsail.

In support of the inference that the mast interference is a primary cause of the low suctions on the mainsail, it will be noted that the curve for the jib shows no sign of that double maximum and intermediate minimum which mark all of the mainsail curves, but follows almost exactly the form which would be expected on the upper surface of a good wing section.

Interaction of Mainsail and Jib

The next point investigated was the extent of the interference between the mainsail and the jib. The necessity of some investigation of that point was apparent from the fact, upon which all experienced yachtsmen appear to agree, that the performance of a boat is better when the mainsail and jib are reasonably close together than when they are far apart. Assuming that to be true, it is evident that the jib must have some beneficial effect on the mainsail.

To determine in detail the nature and magnitude of any such effect, the pressures on the mainsail were measured with the jib lowered. Three rows of points were taken, being the first, third, and fourth of the rows described earlier in this report. The lowest was approximately three feet above the boom, the second on a level with the head of the jib, and the third near the peak of the mainsail.

The most striking feature of the curves is the absence of any distinct peak of high suction on the leeward side at the lowest row of points. The maxima at the other two rows are present as usual, the maximum suction in the highest row being about 60% greater than that in the lowest. As far as anything can be said to be

certain on the basis of a single test of this sort, it seems to be certain that this great loss of efficiency near the boom is due to the lowering of the jib, and the explanation of the effect is easily found in the light of experience with wings.

When the angle of attack of a wing, and particularly of a wing of a depth of curvature approximating that of the ordinary sail, is increased steadily, the lift increases continuously up to a certain well-defined point and then drops off more or less abruptly. In some cases, this drop is absolutely discontinuous in nature, the lift falling by 40% or more instantaneously when the critical point is passed, and the wing is then said to "burble." At the same time, as the angle is increased, the form of the pressure-distribution diagram changes, the peak of suction over the leading edge increasing in sharpness and intensity until the maximum lift is reached, and then breaking down with a suddenness comparable to that with which the lift falls off. A few degrees beyond the angle of maximum lift the suction has become substantially uniform over the whole extent of the upper surface, from leading to trailing edge.

The same thing happens on the sail when the angle of attack is too large, but a sail differs from a wing in that the section and angle of attack both vary along a line perpendicular to the wind. The sail is held with respect to the centre line of the boat only at the boom, and the upper part is free to swing off under the impulsion of the air pressure, setting itself more nearly parallel to the wind. In other words, the angle of attack of the sail increases steadily from peak to foot. The nature and amount of this change of angle have a very important effect.

If the amount of twist in the sail is very large, and if the upper part is working at an angle of attack large enough to prevent fluttering, the part of the sail near the foot is liable to be at an angle beyond that at which the flow of air "breaks down" and the peak of suction disappears.

The jib prevents the loss of efficiency by the mainsail because it prevents the breaking down of the flow. It acts as a guide-vane to bring the air onto the mainsail at a proper angle, as the air which has just flowed off from the jib is obviously travelling at a smaller

angle to the axis of the hull (the motion on the air being considered always relative to the boat) than is that in the free space above. Again an aëronautical parallel is at hand, for the combination of jib and mainsail acts essentially in the same manner as the combination of the forward and after parts of a slotted wing such as has recently been developed by Mr. Handley Page. Just as the presence of the jib makes it possible to present the mainsail at an abnormally large angle of attack, so the provision of the slot in a wing makes it possible to use and to obtain extraordinary high lifts at angles of attack well beyond those where "burbling" would be expected to occur with any ordinary wing profile. A slotted wing gives its maximum lift at an angle about 8 degrees greater than that where the maximum is reached for a similar form without the slot.

Of all the points brought out by these tests, this ranks as the most important. While the importance of the jib in the sailing of a boat has, of course, been empirically apparent from experience, and has been emphasized by all practical students of the performance of small sailing craft, no satisfactory explanation seems to have been offered, or at least to have been generally known by those to whom it was a matter of concern, and the importance of the twist in the mainsail, like that of the mast interference, has not been appraised at its full worth.

Since the usefulness of the jib in helping out the mainsail is a function of the amount of twist in the mainsail, some attention should be paid to the factors controlling that twist. Obviously, the position of the sail at any instant represents an equilibrium between several forces, some of which are aërodynamic and vary as the square of the wind speed, while others, especially the weight of the boom, are due to gravity, and, for a given boat, are independent of everything except the angle of heel. The weight of the boom and of the sail itself, combined with the pull in the sheet when close-hauled, tend to reduce the twist, while the aërodynamic forces tend to increase it. Evidently, then, the amount of twist of a given sail on a given boat will increase with increasing wind speed. It follows that the importance of the jib is greatest in heavy winds, and also that, of two jibs for a given boat, a high

one should be best in light airs and a low one when the wind is strong, the action of the jib then being needed in front of the lower part of the mainsail only, to correct for the difference in angle between the upper and lower parts. There is ample practical experience to support the first of those deductions, at least, especially the case of a cat-rigged Sonder class boat which was very successful in light winds and did badly in strong ones.

The amount of twist in a sail changes not only with the wind speed but also with the size of the boat, even though several boats of different sizes were geometrically similar in form. The law of variation can be deduced by the use of the theory of dimensions, and is found to have the same form as the law of comparison for the resistance of ships. That is, the wind speed which produces a given lift of the boom and twist of the sail is proportional to the square root of a linear dimension of the boat, assuming that the weights of all spars vary as the cube of a linear dimension, an assumption which is probably not far from the truth. The amount of twist in the sail of a 75-footer in a 30-mile wind, for example, would be roughly the same as that in the sail of an 18-foot boat in a breeze of 15 miles an hour. Since the two boats will, on the average, sail in winds of about the same strength, it follows that the usual twist in the small sail will be more than that in the large one, and that the rôle of the jib will be correspondingly more important on the small boat. Satisfactory rigs cannot be obtained by geometrical enlargement unless this is taken into account.

The failure to allow for similitude relations and to establish conditions of test which will insure a correct lift of the boom, unfortunately invalidates much of the model research on sails performed up to the present time. Nearly all wind-tunnel experiments have been run with sails and spars which were geometrically similar to those to be used on the full-sized boat, and at wind speeds equal to those likely to be encountered in sailing. The result has been that the twist of the sail, serious enough in any case on an actual boat, has been terribly exaggerated. In one particular case a model of a gaff sail, tested in the wind tunnel at 20 miles an hour, showed an actual angle of twist between the boom and gaff of 43 degrees when close-hauled and 67 degrees when reaching.

Finally, as between different types of sails, the Marconi rig undoubtedly permits of less twist in the sail than does the gaff arrangement; and the remarkable efficiency of the Marconi on small boats is probably due in some part to that fact.

In summary, the conclusions resulting from the first part of the research may be restated:

1. The leeward side of the sail furnished much more than half the driving force.
2. The interference of the mast has a distinctly harmful effect, and careful study should be given to the possibility of reducing that effect by streamlining the mast or otherwise.
3. The efficiency of the jib, measured by driving force per unit of area, is much greater than that of the mainsail.
4. The jib serves to guide the air onto the lower part of the mainsail, and prevent "breaking down" of the flow. That function of the headsail is most important on small boats and in heavy winds.
5. The twisting of the mainsail, partially corrected for by the presence of the jib, is nevertheless distinctly harmful. It should be restrained, as much as possible, by the use of two sheets or otherwise.

Flow of Air Around Sails

The study of the pressure distribution led, as described in the previous part, to certain conclusions regarding the probable flow of air around the sails. To secure confirmation of those provisional conclusions it was desired to make direct studies of the flow around the sails by rendering that flow visible, and a supplementary investigation was therefore undertaken. The yacht Papoose was again made available through the kindness of Messrs. Livingston Davis and John S. Lawrence.

The method used was the common one of introducing smoke into the stream at a considerable distance upstream from the point where the flow was to be examined, the smoke having approximately the same density as the air and travelling with it. The smoke for the purpose was secured from candles furnished through the kindness of the Chemical Warfare Service of the U. S. Army.

These candles weighed about one pound each and furnished a dense, white, non-asphyxiating smoke for a little more than two minutes. In general, they were mounted at the end of a pole about 12 feet in length and so could readily be moved about and held forward of any point on the sail where the flow was to be examined. The flow was studied directly from several points of view by observers on the boat and on a launch running alongside, and moving pictures were also taken to furnish a permanent record which could be studied at leisure. The moving-picture record was very graphic, far superior to any verbal description of the flow. Such description could, in fact, be made up more accurately at most points from a repeated viewing of the pictures than from a single visual observation at the time.

Discussion of Results of Tests

1. *Close-Hauled Under Full Sail.*—The first of a series of tests was made while sailing on the wind with both jib and mainsail set, and observations and pictures were taken both from the leeward and windward sides. In connection with the flow on the windward side of the sail, the most striking feature is the tendency of the air to escape under the boom. When a candle was held well to the windward of the mainsail and forward of the mast and more than 4 feet above the boom, the smoke flowed across the sail in a rather turbulent manner and at very moderate speed, the general lines of flow following the contour of the sail and being approximately parallel to the boom. As the candle was lowered and brought closer to the boom the flow changed direction rather abruptly, turning downwards and around the boom. When the candle was so held, for example, that the smoke started onto the sail two feet above the boom at the mast, it all flowed under the sail and disappeared entirely in less than 60% of the way back to the leech. The flow after passing under the boom was very turbulent, but continued in a general downward direction off the side of the hull.

The flow on the windward side of the jib was very similar in its general characteristics. The tendency to escape between the sail and the deck was again shown, and the adherence of the lines of

flow to the contour of the sail again appears. All of the air which passed along the windward side of the jib close enough to the sail to be materially affected by its presence went to leeward of the mast along the leeward side of the mainsail. This indicates the behavior of the windward side of the mainsail to be independent of the presence of the jib, an indication later to be verified by tests made with the jib lowered. The tendency for the air to turn constantly to leeward after passing the leech of the jib is, of course, due to an "advance effect" of the mainsail, analogous to the up-draught found ahead of a wing. The up-draught was shown still more marked by going straight out to windward, the lines of flow abreast of the mast and several feet to windward across the boat, as well as those abreast of the head-stay, being very nearly perpendicular to the axis of the hull. The boat only needed to be swung off a little from the close-hauled condition (to about six points off the wind) before smoke which passed behind the shrouds would go forward of the mast and along the leeward side of the mainsail. Even when close-hauled smoke liberated a foot ahead of the head-stay and three feet to windward (the term "windward" is used here as elsewhere when it indicates a dimension, to describe a direction perpendicular to the axis of the hull rather than the actual wind direction) passes ahead of the head-stay and along the lee side of the sail. This characteristic of the flow is shown in Fig. 7, Plate 6, where the general arrangement of the streamlines is plotted.

It will be noted, in Fig. 7, that the lines of flow leave the sail travelling in a direction quite different from that of the section at a distance ahead of the boat, the local wind having turned more nearly parallel to the axis of the hull. By analogy with aëronautical nomenclature, this phenomenon may be called the downwash of the sail. The downwash of course tends to head a following boat off the wind, and the "back-winding" of a boat sailing close-hauled by another to windward and a little ahead of it is probably due more to change in the direction of the air flow than to any alteration of its speed.

In addition to taking observations on the flow around the sails themselves, that around the hull was examined. When the smoke

was generated very close to the water and a short way to windward of the boat it was found to rise very sharply over the windward rail, passing across the hull below the boom and turning down with almost equal sharpness after passing the lee rail. It is, of course, necessary that the air, which is travelling in a direction of 45 degrees to the hull near the surface of the water, shall clear the hull in some way, but it was rather surprising to receive this evidence that the change of direction of flow is almost purely in a vertical plane. It had been anticipated that the primary tendency would be for the air to turn parallel to the hull and blow alongside to the stern without rising appreciably. As a matter of fact, however, very little tendency to such a change appears. The wind across the hull between the boom and the deck is then derived from two sources—from the escape of air off the lower part of the mainsail and from the rise of air to clear the hull. Combined, they give a draught of relatively high velocity, which suggests in the first place that there is a possibility of aërodynamic gain by closing the gap below the sail, and in the second place that the practice sometimes followed by small-boat sailors, of sitting in the cockpit and depending on the feel of the air on the face to judge the course of the boat, is a very dangerous one unless practiced only with a particular boat and with a particular sail with whose performances the helmsman is intimately acquainted. The flow of air below the boom and over the deck may have but little relation to the speed of the boat or to the direction of the free-moving air relative to the path sailed.

The next step was to make similar observations of the flow on the leeward side of the boat. The most striking thing noted there was that the velocity of the flow along the leeward side is very much higher than to windward. While there were no definite means of measuring, and visual observation of a cloud of eddying smoke is likely to be deceptive, it was certain that the ratio of the velocities was more than two, and it might easily have been as high as three. This, of course, does not come as a surprise to students of aëronautics, and in particular of the behavior of the wings, for the fundamental theory of lift of cambered surfaces is based on the assumption of a circulation around the wings super-

posed on a normal rectilinear flow, the combination of the two giving an increased velocity above the section and a decreased velocity below. What is true of wings is also evidently true of sails; and in fact it is easier to secure experimental verification of the existence of a circulatory flow in the instance of the slow-moving sailboat than on the airplane travelling at very high speed and passing constantly and rapidly into fresh air. The fact made obvious by these experiments—that the flow of air is most rapid close to the leeward surface of the sail—is, however, in direct opposition to the common belief that the air is relatively undisturbed in that neighborhood and that anything which is to be moved out of the way should be put to leeward.

The smoke flow gives direct evidence also of the importance of mast interference. The smoke, if started just far enough to leeward to escape going onto the windward of the mainsail, strikes the mast, eddies around it, and leaves a region of discontinuity for some eighteen inches to the rear. Only after that zone is passed does the flow become smooth, but from that point on it adheres closely to the contour of the sail. The streamlines curve around to follow the canvas under the influence of a pressure gradient which holds the particles of air to their curved path.

On the leeward side of the sail the flow continues nearly parallel to the boom, and there is little tendency, such as was noted on the windward side, to break away from the normal lines of flow near the boom. There seemed to be but little difference in turbulence on the two sides at the time when the smoke reached the leech.

Another striking feature of the tests was the sharpness of the demarcation between the streamlines passing over the two sides of the sail. Even when the smoke candles were held several feet ahead of the mast, a movement of a couple of inches at the critical point suffices to draw all of the smoke from the windward onto the leeward side, or vice versa. It was almost impossible to get the candle in such a position that the smoke would divide between the two sides of the sail for more than a few seconds. This is very interesting, as it shows a perfectly sharp distinction between the two sets of streamlines extending far upstream. If there were not such a distinction, it might be expected that a division of smoke

between two sides of the sail would be common, for, despite the fact that all the smoke issues from a single point, the wind is sufficiently turbulent so that the cloud is diffused over a considerable area within a distance of a few inches from the aperture of the candle.

2. *Close-Hauled, Jib Lowered.*—The second series of tests was made with the boat driven by the mainsail alone, the jib being lowered, principally in order to study further and from a different point of view the effect of the jib on the mainsail, which had appeared to be of such vital importance in the pressure-distribution tests.

The flow on the windward side of the sails was the same with the jib lowered as with both sails set, and the amount of up-draught (flow across the boat) produced by the mainsail appears to be substantially unaffected by the absence of the jib. When the smoke was allowed to flow over the leeward side of the mainsail, however, it was found that the turbulence was very much increased by the absence of the jib and the whole arrangement of the stream materially altered. This is, of course, noticeable only on the lower part of the mainsail, below the head of the jib, and the effect becomes intensified as the boom is approached, the flow over the lower third of the sail being distinctly broken and not adhering closely to the contour of the cloth. In short, the form of the stream is that characteristic of the motion of air around a wing at a very large angle of attack, above that of maximum lift. The results are thus in agreement with those of the pressure distribution tests, from which, it will be recalled, the conclusion was drawn that the effect of the jib is to guide the air along the contour of the mainsail and thus to counteract the effect of the twist in the mainsail, which causes its lower part to be presented at an excessive angle of attack. The conclusion is inescapable, whether it be the pressure distribution curves or the moving pictures of the flow which are under examination.

In addition to being more broken, the flow on the leeward side of the sail was somewhat less rapid with the jib lowered than with both sails raised. This again is consistent with results of the earlier work and with past experience on wings.

3. *Close-Hauled, Mainsail Lowered.*—An attempt was next made to get the flow around the jib alone. The results were quite unsatisfactory, as the boat would not head closely enough into the wind to give a real parallel with the earlier tests. In general, it did not appear that there was any marked difference between the flow around the jib when the mainsail was raised and that when it was lowered, other things being equal. The most interesting feature of the test with the jib alone furnishing the driving force was that the air coming up to the windward side of the hull continued to pass over the hull and drop quickly off the lee side, thus indicating that the streamlines around the body of the boat were not primarily dependent on the presence of the mainsail. Even this, however, was inconclusive, as the boat was really reaching rather than beating when the jib alone was raised, and when the wind met the hull approximately at right angles there would, of course, have been much less reason to expect that the air would pass around the stern than when the wind direction was at an angle of only 45 degrees to the hull.

4. *Reaching Under Full Sail.*—The next step was to make a study of the smoke flow with the boat travelling approximately at right angles to the wind direction. The flow can best be described by comparing and contrasting its features with those which it shows when going to windward. On the windward side there was comparatively little difference, although the flow was perhaps a little more turbulent in the reaching condition. The most striking change was that the tendency of the air to escape under the boom was very much reduced, the flow on the lower part of the sail remaining nearly parallel to the boom except when starting within a few inches of that spar, and even then only passing across the deck at a considerable distance away from the mast.

On the lee side there was much more change, the flow being very much more broken and disturbed and the smoke moving at a lower velocity than when beating. This was true both of the jib and mainsail, and was, of course, what would be expected, as the angle of attack becomes very large on a reach and the lee side of the sail rapidly loses effectiveness as a result. It is probable that the lee side of the sail furnishes about 75% of the driving force when

close-hauled, 45% on a reach, and 25% when dead before the wind.

5. *Off the Wind with Spinnaker Raised.*—The particular point of interest in the experiment off the wind was the behavior of the spinnaker, which had had a hole about a foot in diameter cut near its centre. The flow was rather difficult to analyze in detail, as the smoke tended to accumulate on the spinnaker and to pile up in such a vast cloud, because of the small wind velocity relative to the sails, that neither moving pictures nor direct observations gave all the information that could have been desired. It was very plain, however, that the flow through the hole in the spinnaker was negligible in amount. In fact, it was impossible to be sure from the rear that any smoke at all was passing through. The main lines of flow led directly across the spinnaker and off the inboard edge, while a little air passed downward and off the lower edge. Judging from the flow of the smoke, however, not more than 25% of the total amount of air striking the spinnaker escapes anywhere except across the boat and off the inboard side. Despite the fact that the spinnaker was carried well forward of the mainsail, with a distinct gap between the two pieces of canvas, the very slightest luffing of the boat was sufficient to make the smoke flow from the spinnaker onto the mainsail and off at the leech. It is difficult to draw definite conclusions without further trials, and in particular without trial of sails of different cut; but it seems very probable from these flow observations that there should be some distinct relation between the fullness of the spinnaker and the gap between the spinnaker and mainsail. If the two are to work quite independently, the full sail is undoubtedly advantageous, but if the spinnaker is to be so set as to reduce to a minimum the opportunity for air to escape off its inner edge and in front of the mainsail, it would be advantageous to use a flatter cut. If the spinnaker is cut full and if there is any gap at all between the sails, the spinnaker should be rigged well forward to reduce the back-winding of the mainsail by the flow of air off the inner edge of the spinnaker. The pressure on the forward side of the mainsail from this source must be a factor of distinct importance under certain conditions.

Considering shapes of sails the advantage is distinctly with the forms of deep curvature continuing to curve all the way back to the trailing edge. The relatively poorer performance of those forms at very small angles is less significant than it might at first sight appear, for a boat actually never sails closer to the relative wind than 35 degrees, and the introduction of the windage of the hull and rigging tends to increase the advantage of the deeply cambered sections giving a high lift.

Shallow curvature has two advantages as against a deeper camber, however, which are not directly apparent from any test on a rigid model and which should be taken into account. In the first place, a contour of moderate camber holds its form better, as the canvas stretches and slaps about, than does one of a sharper curvature. Second, if a smaller angle of attack is made too small, there will be a pressure on the upper surface of the sail which will cause it to flutter near the luff, even though the forces on the whole sail might remain satisfactorily large at those angles if the sail could be kept rigid; and this fluttering will appear more quickly on a deeply cambered section, with a sharply dipping leading edge, than on any other. Neither of these effects, however, acts against the continuance of curvature all the way back to the leech.

The values of the angle of attack which are found to give the largest driving forces emphasize the importance of the twisting of a sail. If the sail remained flat in one plane, the greatest speed in reaching would be secured with the boom at an angle of from 72 degrees to 76 degrees to the hull, instead of the 45 degrees which approximately represents actual practice, and, in general, the boom would lie at from 10 degrees to 18 degrees to the wind direction except when running.

Section No. 5 has its angle of zero lift at about −8 degrees of the chord to the wind, which is very much smaller than the corresponding angle for the forms of shallower camber. It might prove advantageous, therefore, the twist of the sail being unescapable, to have the sections near the peak of different camber from those near the boom.

Heeling Force Results

The driving force is found to increase steadily from zero, at an angle of somewhere between 5 degrees and 10 degrees to the wind, up to a maximum somewhere just beyond a reach. The heeling force, on the other hand, rises very quickly to a maximum at about 20 degrees to the wind direction, after which it falls off rapidly to an almost insignificant value when reaching. For reaching quality, then, sails should be judged by their driving force alone, and the merits of the deep camber and of the curvature continued back to the leech remain unimpaired; but in estimating performance close-hauled, due weight must be given to the component of force across the boat.

The driving force is dependent primarily on the lift of the sail, considered as a wing, while the heeling force is governed principally by the drag characteristics. It would be expected, therefore, by analogy with aëronautical experience, that the sections of lower camber would show up better in giving a small heeling moment than in producing a large propelling component, and that proves actually to be the case. From the practical point of view, this confirms the lesson of sailing experience, that deeply curved sails perform relatively better in light winds, when the heeling moment is of little importance, than in stronger breezes.

Effect of Mast Interference

A study of the relations between the mast and the sail, and of the interference of one upon the other, was especially desired in connection with this series of tests, in view of the importance of that interference as already revealed in the tests made on actual boats. The mast was simulated in the wind tunnel by attaching a rod one-eighth of an inch in diameter at the leading edge of the model and running from tip to tip. This represents to scale a mast about 4½ inches diameter at a point midway between the boom and the peak of the mainsail of a boat of the S-class. Of the five models, all except No. 4 were tried with the mast. All of the remaining four except No. 2 were tried with the mast in three positions: above, centred on, and below the leaning

edge; the first and third of these positions corresponding, respectively, to a mast on the leeward and the windward sides of the sail.

In actual practice the sail bends away from the mast when sailing close-hauled, so that if the hoist is on a tract the mast lies almost entirely to leeward of the prolongation of the curve of the sail beyond the luff; while if hoops are used, the spar is virtually centred about the leading edge of the sail.

All of the tests are in agreement in showing mast interference to be injurious to performance, the driving forces in all cases being lower and the heeling forces larger when the mast and sail were tested together than when the sail was tested alone. Furthermore, all of the tests were in agreement in showing the position of the mast to leeward of the sail to be the worst of the three, and all of the runs except those on Section No. 5 indicated that the position of the mast to windward of the sail was the best. In general, however, there was relatively little difference between the position to windward of the sail and the central setting.

Other things being equal, the hoops should thus be superior to a track, but of course the track has other advantages. If the central position can be realized in practice, it does not appear that the design and construction of any special mechanism to swing a sail completely to leeward of the mast would be justified, except as an interesting experiment. With the mast set centrally, the effect of mast interference on driving force is very nearly the same for the three sections tested, the decrease of force being on the average 18% when sailing close-hauled and 15% in reaching. Only a very small part of this effect in the first case, and none whatever in the second, is due to the direct resistance of the mast, by far the larger part being attributable to the disturbance of the flow about the sail by the presence of the spar.

Effect of Flow Between Boom and Deck

The mapping of the flow around sails with smoke, in the course of the experiments carried out at Marblehead, showed a very pronounced tendency for the air to turn downward after passing the mast close to the boom and flow under the boom and sharply

across the hull. The effect of eliminating this transverse flow was determined by direct experiment in the wind tunnel.

For this purpose a sail model of triangular form was made, 18 inches on the hoist and 6 inches along the boom. The model was made by first bending up a rectangular model of No. 5 section, 18 inches by 6 inches, and then cutting it across diagonally. In this way an amount of twist comparable with that actually existing in a sail was thrown into the metal model. The hull of the boat was not represented, but the surface of the water was simulated by a thin sheet of plywood laid across the wind tunnel. Forces on the sail were measured successively with the boom 2 inches above the place, 1 inch above it, and with the two in direct contact. The second case would represent typical actual conditions most closely.

It was found that the driving forces fell off steadily as the boom approached closer to the surface representing the water, the decrease between the two extreme positions being about 20%. As it appeared likely that this decrease was due, at least in part, to the slowing up of the air by the friction on the sheet of wood and to a resultant decrease in the speed of flow across the sail, another experiment was tried. In this the boom was left 2 inches above the sheet of wood, but the space between was filled with another strip of metal bent approximately to the same curvature as the lower part of the sail, and kept parallel to it. The forces, however, were measured on the original sail alone, not including this added strip. Even under this condition it was found that the driving force was less than when the gap below the boom was left open, although by only 2 or 3% in this case. The heeling force was also reduced in an even larger degree, which is, of course, desirable. It does not appear, however, that any effort should be made to bring the boom closer to the deck than it now lies. Indeed, were it not for the raising of the centre of gravity and the resultant decrease in stability, and for the increase of the heeling moment by the lengthening of the arm at which the heeling force acts, it seems that there might be benefit from raising the sail even higher above the deck as a whole.

THE TOMS RIVER CUP

(With a Little of the History of Toms River)

By Edward Crabbe

THE town of Toms River has a history dating far back and which is full of interest. The origin of its name is the subject of much dispute, because Indian Tom, a noted aborigine, resided there more than a century ago; and further, a certain Captain William Tom, in the late years of the seventeenth century, penetrated on foot the barren land of New Jersey and discovered the river from the west side.

It was on the present site of Toms River that Captain William Tom decided to settle and, with those that followed him, established the village that later became the town. It is to be remembered that Barnegat Bay and the river had previously been visited by Dutch and English sailing ships, whose captains had made crude drawings and charts but had not established settlements.

Toms River was a military post during the American Revolution. The duties of the militia were to check contraband trade out of the inlet to New York and to aid privateers that brought prizes of enemy ships into the harbor. In addition, protection was necessary for the valuable salt works that were located at a half dozen places within ten miles or more of the town.

During the Revolution the blockhouse at Toms River was destroyed by an English expedition piloted by William Dillon, an English ship captain, who had been sentenced to death, imprisoned at Freehold and later escaped to get aboard another English vessel which led in the attack on Toms River.

A certain prominent point of land in the bay, known as Good Luck Point, is said to be named as it is because it was at this spot that Captain Dillon, during his escape, took to the water and reached a friendly ship.

THE TOMS RIVER CUP

In Edwin Salter's *History of Monmouth and Ocean Counties of New Jersey* (page 101), we read: "The first land taken at Toms River appears to have been a small tract of seventeen and one-half acres along the river near Messrs. Aumack's store, November 14, 1741; and same date a tract of seventy-five acres back of Cowdrick's Hotel—by James Alexander, Surveyor General." The writer mentions particularly this quotation because for fifty years or more Toms River has been known to many people for its famous old Ocean House, owned apparently for over 100 years by the Cowdrick family and during the latter part of the last century by Cowdrick and Cook, the latter term under the management of Captain Cook.

THE FAMOUS TOMS RIVER, N. J., CUP

It has been raced for by Catboats each year since 1871

Many are the stories told of Captain Cook and of his well-known characteristics and his hotel. The direct management for years of kitchen, dining room, and bedrooms being in the hands of "Rose" and "Mary," about whom tradition said they were rescued from a boat that was wrecked on the coast, while sailing from Ireland to New York. Captain Cook salvaged them from the refugees, took them to his hotel, instructed them in the duties of his hotel and forever afterwards managed affairs in peace and comfort because the two gentle souls never left his employ and Toms River. Meal hours were so strictly observed that a traveller a few minutes late was decisively told he could get nothing to eat until the next meal.

It is said that a Lakewood millionaire once told Cook he would like to give a dinner to some friends at the Ocean House at eight o'clock at night, whereupon he was refused and asked: "You have

servants of your own. Why don't you give your dinner at your own house? My girls work hard and are done at seven o'clock."

Once certain Windsor chairs on the hotel porch were admired and the Captain was asked where he had bought them. The answer was characteristic: "At Freehold; but if you buy any of them be sure to have them made without the cross-rung in the front between the legs, because I have always noticed the loafers that visit here sit with the chairs tilted up against the wall and their feet perched up on the front rungs. I didn't have the chairs more than forty years before the rungs were worn through, by rough shoes, and had to be replaced with wire."

Modern methods of living and old age forced Captain Cook about twenty years ago to give up the management, so thus passed one of Toms River's most interesting characters of private life.

After the Revolution Toms River became a successful small village, whose people lived by farming, fishing, charcoal-making, boat building, and coastal trade in small sloops. No one knows how many years ago small sailboats were built there for pleasure, but there is no reason to doubt that the natives of these Jersey towns had boats for pleasure, fishing, etc., 150 years ago. Some old prints show small catboats and, of course, we know the first sneakbox was built at Barnegat in 1836.

The shallow, safe waters of Toms River and Barnegat Bay and the existence of the strip of land six miles away with the ocean beach on the eastern side offered many reasons and opportunities for the use of small boats. There being no other way, except by boat, to get from Toms River Village to the ocean beach, it is most logical to assume the early inhabitants of this part of New Jersey built and used small shallow-draught boats. The catboat, being an essential American production, probably was used on Barnegat Bay at an earlier date than anywhere else in the United States. It is a type of boat particularly adapted to use in shallow waters having narrow channels. It is therefore not surprising that Toms River early established a Yacht Club with races and a cup to be contested for by catboats.

The town of Toms River is located at the navigable head of the Toms River, in Ocean County, New Jersey. The river empties

into Barnegat Bay five miles east of the town. This junction point is well known to all Jersey sailors by the sand point extending one-quarter mile from the north shore, nearly to midstream, known as Long Point. From this to a strip of narrow land separating bay and ocean, a distance of three miles, Barnegat Bay presents one of its finest bodies of sailing waters. The inlet between ocean and bay directly east of Toms River was closed by sand many years ago, and all attempts to reopen it were futile.

To the north of the mouth of Toms River there are ten miles of good sailing water to Bay Head. To the south the bay continues for forty miles to Atlantic City. The shores are dotted with old fishing villages, quaint towns, and many summer resorts. The bay in a northerly and southerly direction follows the line of the beach and at all times is separated from the ocean by the narrow strip of land which is cut in three places by inlets that are navigable. The best sailing waters of the bay are from the mouth of Toms River to the south, a distance of twelve miles, and for this reason the races for the Toms River Cup are held on this part of the bay—that is from Long Point to Barnegat Inlet and return.

The Toms River Yacht Club Challenge Cup is said to be one of the first Challenge Cups to be raced for by small boats in the United States. The story of its beginning and the many tales related about the contests are interesting to all who follow the racing game.

In 1871 Toms River was a small town where almost every man owned a boat and every man and child knew how to sail. There was deeper water in the river than at the present time and sailing was the great sport and recreation. Competition and rivalry were strong among the skippers, and finally several of them clubbed together and decided to have an organized race. A meeting of the citizens of Toms River and the owners of yachts was held in the Stewart House on Saturday evening, July 1, 1871, for the purpose of forming a Yacht Club. The fund collected for the prize cup was handed over by the committee to the Toms River Yacht Club and Mr. Finn and Mr. Chattelier were appointed a Committee to purchase the first prize, a silver cup, that cost $175, and was bought at Tiffany's in New York.

On July 8th, a meeting of the Toms River Yacht Club was held, with Mr. C. S. Haines in the chair as commodore, for the purpose of adopting rules and regulations governing the races.

Competition was open to all yachts that were owned three months previous to the race and whose owners hailed from towns located between Bay Head on the north and Tuckerton on the south.

On motion of Vice-Commodore John Grant, the distance for the race was declared to be ten miles out and back, making twenty miles. The course to be sailed for the Challenge Cup was to be from the stake boat on the east side of Long Point to a stake boat off the south point of Forked River and back; the race to take place on the 26th day of July, 1871, at ten o'clock precisely.

It was further resolved that all challenges for the prize cup shall be sent to the Commodore, accompanied by the sum of ten dollars forfeit, and the challenge to be sent to the holder of the cup. If the entrant was not approved by the Committee, the money was to be returned. If the challenge was accepted by the Committee, the holder of the cup was to receive the ten dollars paid by the challenger and in addition the holder of the cup was to receive one-half of the entrance money paid by all other contestants that were approved. The balance of the entrance money was turned over to the club.

The following rules were adopted for the first race and were followed, in the main, in most of the succeeding races:

Rule No. 1. To draw for position at start.

Rule No. 2. Each boat to take a position on a line designated by the committee previous to the start and to anchor fifty feet apart.

Rule No. 3. At firing of first gun captains to haul within twenty-five feet of anchor unless otherwise directed. Two gun start. Race to start from anchor without trip or slip line and to pay off as directed at time of start.

Rule No. 4. All boats to pass north and east of a stake on Good Luck Point, and then proceed to a stake boat anchored off the south point of Forked River. Rounding said stake boat from east to west, thence returning passing stake on Good Luck same as in going down.

Rule No. 5. Race to be ended when boats get in line between two stakes off Long Point where time will be taken.

All yachts entered sailed at the same time.

This same course was used for the races for the cup until 1880, when the Pennsylvania Railroad bridge was put across the bay and the starting line was moved to Turtle Island Ridge. The water at the upper end was rather shallow, so in 1884 the starting line was moved to Cedar Creek Point and the boats went twice around—a six-mile course, which is the same as the one now used. The Cedar Creek course is the best course that could be laid out

TYPICAL BARNEGAT BAY CATBOAT OF 1880

anywhere on Barnegat Bay. The water is a good average depth, without shoal places and with a width of three or more miles. Thus a good triangular course is possible.

The day after the first race, won by yacht Vapor, owned by Job Falkinburg, of Forked River, the sailing rules were revised to the effect that all measurements were to be made at Toms River Village, twenty-four hours previous to the race, or at the Commodore boat on the morning of the race, and all boats were to be

measured in the water. All entries had to be made seven days previous to the race. Catboats were allowed to carry but one mainsail, and sloops one mainsail and one jib. After the first race, in fact, the same day, four challenges were received by the victorious Vapor, but she won again on October 27th of that year.

The first race was such a success and so strong a feeling of rivalry developed that there were many years of hectic boat-building and racing. When Race Day came anyone who owned a boat or could get foothold on a boat went down the Bay for the races and there was more enthusiasm than is ever seen now. The boats were so evenly matched and the racing so keen that one owner sawed three inches off his stem to make the boat shorter.

Before the races the boats were hauled out and pot-leaded; and when rivalry was keenest a watchman stood over each boat all night to see that there was no tampering done with the hull or rigging. No matter what the weather was on the day of the race, or from what quarter the wind blew, the course sailed was the one laid down as required by the deed of gift seven days before the race.

In the race of 1880 there were curious prizes offered besides the cup which went to the winner. Second prize was one twenty-dollar gold piece; third, fifteen dollars in greenbacks; and fourth, ten trade dollars.

The original contestants for this cup in the early days were boats mostly built in the towns along Barnegat Bay, and were owned and sailed by retired vessel masters. The contest, however, awakened interest and several boats were brought to Barnegat from Keyport, the building and designing of them having been done by Captain Bill Force. His most famous boats were Gem (originally named Ralph Gowdy), Martha, Mary Locke, and Rival. The Gem and Martha disputed the championship of the bay and successfully accepted all challenges for some years.

About 1885 Eph Robinson of Toms River produced two famous boats, Ripple and Bertha. One season Martha and Bertha sailed a duel that has for years been famous because the race was held during a very bad storm. Neither skipper would reef his boat's sails and Bertha's timbers were so sprung it was not possible ever to race

the boat again. Martha, though twisted out of shape, sprung back again and was as good as ever. It is interesting to note that in 1923, when the Gem was forty-three years old, the writer of this paper bought the boat and treated her to new timbers where necessary, new mast and spars, and a new suit of sails, thinking she could do something against the modern Mower and Sweisguth catboats entered in the races. The result was, of course, failure, because boat designing has advanced with all other scientific endeavor.

While Joel Parker, a member of an old Forked River family, was Governor of the State of New Jersey, it was customary for him to attend all races held for this famous trophy.

All the winners of the Toms River Yacht Club Challenge Cup were catboats until 1875, when the sloop Cynthia won. The next winner, Martha, was a sloop, but she was later changed to a catboat. These early boats were tall gaff-rigged, carrying from thirty to forty sandbags apiece. They were allowed a crew of one man to every three feet of overall length.

In a memorandum still in existence made by Captain Britton C. Cook, as official measurer, on June 17, 1873, the Vapor had the shortest waterline, 23 feet, 9 inches; and the Charrie G. Hooper the longest, 28 feet, 7¼ inches. They were mostly plumb stem with little overhang, as is shown by the Gem, which was 28 feet, 4 inches on the waterline and 31 feet overall. The construction was much heavier than found nowadays in small racing boats, as is shown by the fact that the Gem, Martha, Mary Locke, and Spider are still being sailed. When the Gem was built, copper was evidently high and pennies low in value, for they were used in fastening her planking.

The first race the Gem sailed for the Cup was in 1881, and the last race was in 1923, when the Mary Ann, owned by Federal Judge McKeehan, defeated her. Mary Ann was the first Marconi-rigged boat to sail for the cup, and since then the winners have all been Marconi.

The principal designers of the late winners have been Cary Smith, Herreshoff, and C. D. Mower.

WINNERS OF TOMS RIVER YACHT CLUB CHALLENGE CUP

July 26, 1871	Vapor
Oct. 27, 1871	Vapor
May 15, 1872	Charrie G. Hooper
Aug. 20, 1872	Haze
June 18, 1873	Vapor
Sept. 19, 1873	Lulie
June 3, 1874	Oscar Robinson
Aug. 25, 1874	Vapor
June 24, 1875	Lulie
Aug. 31, 1875	Cynthia
July 5, 1876	Martha
July 4, 1877	Lulie
Aug. 7, 1878	Vapor
July 16, 1879	Vapor
Sept. 22, 1880	Mist
Aug. 23, 1881	Mist
Aug. 1, 1882	Martha
Sept. 20, 1883	Rival
June 5, 1884	Martha
Sept. 13, 1884	Martha
June 10, 1886	Gem
Sept. 3, 1886	Gem
July 7, 1890	Roy
Aug. 8, 1890	Myth
July 11, 1891	Vesper
Aug. 8, 1891	Vesper
June 24, 1893	Gem
Sept. 15, 1893	Merry Thought
July 1895	Spider
1904	Empress
1905	Hummer
1906	Another Old Maid
1923	Mary Ann
1924	Mary Ann
1925	Bat
1926	Spy
1927	Spy

As this record does not cover all years, it is probable the Committee neglected to engrave the names of all the winners on the Cup. As no other record exists, it is impossible to state what boats won.

THE GREAT LAKES OF THE UNITED STATES AND CANADA

By Edwin J. Schoettle

TO form a comprehensive idea of these wonderful bodies of water forming the headwaters of the St. Lawrence system and lying on the borderline between the United States and Canada, a person should study these few statistical figures:

Lake	*Area in Miles*	*Length*	*Width*	*Max. Depth in Feet*	*Height above Sea Level*
Superior	31,200	383	160	1,008	602
Michigan	22,450	320	65	807	581
Huron	23,800	235	98	802	581
Erie	9,960	250	60	180	573
Ontario	7,240	180	53	738	246

Lake Superior is the third largest lake in the world; those that are larger being the Caspian Sea (of 169,383 square miles area and in altitude 86 feet below the level of the ocean), and Victoria Nyanza in Africa (with 32,167 square miles of area and altitude 3,300 feet above sea level). Lake Superior does not freeze in winter, but the others do, although not entirely from shore to shore. Navigation is made impossible, however, by the freezing of the connecting lakes, canals, and rivers. The water is fresh and good to drink except near the large cities, and the Lakes are practically entirely free of current or tide. From the head of Lake Superior they are navigable to Buffalo, at the foot of Lake Erie (a distance of 1,023 miles), for vessels drawing 20 feet; from Buffalo to Kingston, 191 miles, the depth of 14 feet is the greatest that may be floated. The 21-foot difference in height of water above sea level of Superior and Huron is absorbed at the Sault in a distance of one-half mile. The locks take care of this fall in single lifts, and they are among the largest locks in the world.

THE GREAT LAKES
OF
NORTH AMERICA
LAKE SUPERIOR
MACKINAC I
GEORGIAN BAY
LAKE MICHIGAN
LAKE HURON
TORONTO
LAKE ONTARIO
HAMILTON
NIAGRA FALLS
BUFFALO
MILWAUKEE
DETROIT
LAKE ERIE
ERIE
CHICAGO
TOLEDO
CLEVELAND

From Buffalo the River Niagara runs northward a distance of 36 miles, connecting Erie and Ontario and taking care of a drop in sea level height of 327 feet. This great drop is accomplished by Niagara Falls and the rapids above and below the Falls.

The Welland Canal goes around the Falls, and with locks 255 feet long and depth of 14 feet, accommodates boats of large tonnage. The population of the states and provinces bordering on the Great Lakes is estimated to be over 50,000,000 people.

Pages could be written about the vast amount of commercial shipping here and the tremendous tonnage of the boats that are used. At the eastern end the lakes at present have two outlets to the Atlantic Ocean. One is by canal across New York State to Albany and hence to New York City via the Hudson River, which is open to boats of nine feet draught. The other outlet is the natural one by the St. Lawrence River, past Montreal and Quebec to the Gulf of St. Lawrence, through the Straits of Northumberland, and around Nova Scotia. No better illustration of these outlets to the sea could be given, and no other acquaint the world so well with the hardihood of Great Lake sailors, than to introduce in this paper extracts from the logs of two boats owned and sailed by one of Canada's best-known skippers.

On September 22, 1920, Commodore A. Emilius Jarvis, of the Royal Canadian Yacht Club, sailed from Toronto, Canada, for Jamaica in his schooner yacht, Haswell. His course was down Lake Ontario to Oswego—about 150 miles distance, although the actual log record was 184 miles on this occasion. At Oswego he dismantled the Haswell and towed her down the Oswego and Erie Canals to Albany, N. Y., where the boat was rerigged and sailed down the Hudson River to New York. From Oswego to New York, by this canal and river route, is approximately 350 miles. Sailing from New York on October 22, he touched Florida and then sailed to the Bahamas, Cuba, and Jamaica, and came back by way of the Grand Cayman Island, Cuba, and Florida to New York. From here he sailed up the Hudson again, dismantled the yacht at Albany so as to pass through the bridges, and towed up to Oswego, where the boat was again rerigged and sailed home up Lake Ontario to Toronto. He cast anchor again off the Royal Canadian

Yacht Club May 19, 1921, after a total voyage of 5,503 nautical miles.

Of this total distance 1,000 miles was chargeable to the two "voyages" between Toronto and New York, going and coming. A small proportion of the total mileage was absorbed by cruising in and around Jamaica and Florida.

The principal distances in Haswell's voyaging were:

Toronto to Oswego, 150 miles
Oswego to New York, 350 miles
New York to Jacksonville, Florida, 877 miles
Jacksonville to Nassau, 439 miles
Nassau to Clarencetown, 282 miles
Clarencetown to Santiago, Cuba, 358 miles
Santiago to Kingston, Jamaica, 172 miles
Kingston to Grand Cayman, 290 miles
Cayman to Havana, Cuba, 487 miles
Havana to Miami, Florida, 210 miles
Miami to Morehead City, Va., 556 miles (near Norfolk)
Morehead City to New York, 384 miles
New York to Oswego, 350 miles
Oswego to Toronto, 150 miles

The other route to salt water is via the St. Lawrence River and canals. From Kingston to Prescott, a distance of about 60 miles, the river is navigable for sailing craft, although the current becomes noticeable. From Prescott eastwards to Montreal is a series of canals, accommodating 14-foot draught. These St. Lawrence Canals connect navigable stretches of the river and its expansions into lakes, and overcome the difficulties of the rapids. There are six canals in all, and the difference in elevation between Prescott and Montreal is 211 feet. These canals will accommodate vessels 255 feet long, with cargoes of 2,500 tons of coal or 2,700 tons of wheat.

Salt water begins at Montreal in the sense that this is a direct port for ocean steamers. But for nearly 200 miles farther east there is sailing in river water, more and more brackish from the influence of the sea, until Quebec is reached. Yachts bound east can sail from Montreal to Quebec, and so on down the widening St. Lawrence, and into its Gulf, and on to the Atlantic Ocean

through the straits of Belle Isle, Cabot Straits, or the Gut of Canso.

Many Lake Ontario yachts have come up to fresh water or gone down to salt water by the St. Lawrence route. In 1923 Commodore A. Emilius Jarvis sold the Haswell and took her from Toronto to City Island, New York, through the Canal and Hudson River, for delivery to her new owner, who shipped her to California on the deck of a steamer. The same season, 1923, Mr. Jarvis bought the New York Yacht Club's 50-foot waterline sloop, Istalena, and had her reconditioned as a schooner at the Herreshoff works in Bristol, R. I. He renamed her Venture, took her to Larchmont, and raced her on Long Island Sound; then sailed back to Newport and on to Marblehead, Mass., and crossed to Halifax, N. S. From there he sailed to Charlottetown, Prince Edward Island, and through the Straits of Northumberland and Gulf of St. Lawrence to Quebec. From Quebec he towed up to Montreal, as the river current was adverse, and at Lachine, above Montreal, he entered the canals and towed through to Prescott and Kingston. He made sail, and beat up Lake Ontario, arriving at the Royal Canadian Yacht Club after a voyage of 36 days from Bristol, R. I., which had covered 2,135 miles.

The divisions of this voyage, with their approximate distances, were:

Bristol to Larchmont and back to Marblehead	300
Marblehead to Halifax	400
Halifax to Charlottetown	250
Charlottetown to Quebec	700
Quebec to Montreal	165
Montreal to Kingston	160
Kingston to Toronto	160
Total	2,135 miles

These are, as stated, approximations, for on Long Island Sound and elsewhere more water was covered at times than a straight line would involve.

The sailing on the Great Lakes is similar in every respect to the sailing on the ocean, except that there is more motion at sea. The constant swell so well known to ocean sailors is almost entirely

absent on the Lakes. The bodies of water are large enough for a boat to sail for hundreds of miles and be constantly out of sight from land. The storms on these inland bodies of water are as severe as those encountered on the ocean, and to manage a boat in either case the same experience and science are necessary.

Various papers in this book will deal with the bodies of water and boats used at Montreal, Toronto, Detroit, and Chicago.

YACHTING AT CHICAGO

By Donald F. Prather

UST as Chicago is the metropolis of the Great Lakes, so is it the greatest yachting centre on the inland seas. Located at the head of Lake Michigan with 350 miles of open water stretching to the northward, its name, the "Windy City," is well chosen, and the yachting season is a busy one.

During the past season, which covered five full months from the middle of May to the middle of October, races were held on thirty-nine different scheduled events in which the local fleets competed for prizes.

In northern waters probably no other yachting organizations except Chicago and Jackson Park Yacht Clubs can show such a long season, nor one so replete with good competition for all classes of yachts.

There is, of course, more big boat racing on the Atlantic Coast, and the aggregate of boats in all events surpasses ours, but that means scores of yacht clubs. Probably no other one yacht club can show such a list of starters, or such a rich and varied assortment of club courses and cruising races as Chicago Yacht Club offers.

In southern waters, there are clubs with longer seasons, but they start sailing when Chicago yachts—and those on the Atlantic Coast—are still snowed in, and they race after ice is in our harbors and waters. Adding the mileage of Chicago's scheduled races for 1927 shows the amazing total of nearly 1,400 miles.

Local conditions ideally favor the Chicago yachtsman. Prevailing winds during the season are northeasterly and southwesterly. The former generally last from two to three days and kick up considerable seas at times. Nor'westers are not so common, and strong sou'easters are rare. The hot southwest winds often lift five or more miles from shore on meeting the cool atmosphere over the Lake. The average maximum force of the wind on race days

in 1927 was 19½ miles per hour. Compass variation is practically nil. There are no tides. Current is found in the northern waters around Point Betsie on the East Shore and in the Straits of Mackinac, and then only occasionally.

LAKE MICHIGAN, SO ABLY DESCRIBED IN MR. PRATHER'S CHAPTER ON CHICAGO SAILING

Calms and extremely light airs are rare. This is true not only of the average race, but also of conditions during July and August, when the yachts are cruising up or down between the summer resort ports that line the East Shore of the Lake. Should the wind grow lighter in the late afternoon, a gentle night breeze is likely to fan from offshore after sundown. A flat calm is an unusual occurrence, while a fog is met with only occasionally, after a shift in the wind.

While there is no definite regularity to the shifting winds and changing weather, changes of conditions can generally be detected hours in advance. Unforeseen squalls are rare. Violent squalls are met with for the most part in the lower or northern end of Lake Michigan, south of the Manitou Islands or between the Manitous and the Fox Islands, where nor'westers get a seventy or eighty-mile sweep toward the Eastern Shore.

With the exception of a slight ground swell that sometimes runs

Photo, courtesy of the Hotel Belmont

SOUTH END OF BELMONT HARBOR, ANCHORAGE OF A MAJORITY OF THE RACING FLEET OF THE CHICAGO YACHT CLUB
The clubhouse shows at the right

into the local harbors after a change in wind direction, there is no swell to the waters. There is more generally a lively, irregular chop in an average northerly wind.

After a shift to a strong nor'easter, the seas on Lake Michigan make up rapidly. Some notable seas occurred in 1911 when Vencedor, in the Mackinac Race that year, reported waves twenty feet high from their tops to the hollows. The wind during part of that race blew eighty miles an hour. In 1916, in a fifty-nine-mile Stratford Hotel Cup Race, the seas were twelve to fifteen feet from their tops to the hollows, with the tops blown off smooth by the gale. In recent years the record for sustained seas and wind occurred in the 1925 Mackinac Race when a three-day forty-mile norther kicked up a very steep, short sea that made broncho riding seem a gentle pastime.

One condition difficult for a salt-water sailor to realize is that Lake Michigan is Chicago's drinking-water reservoir. The sailing waters are clean and drinking water is dipped from overboard alongside anywhere in the Lake, except a half mile or so from shore or in port. Practically no marine growth exists. This condition makes for clean hulls, and yachts are seldom hauled out during the season to be cleaned.

Never has a scheduled race been postponed for bad weather. Some races—both club course and long-distance—have been sailed in veritable gales of wind that might deter less resourceful skippers and crews.

Canvas and rigging are seldom spared. Reefing is not begun until the line of a white squall on the water is near at hand. In some notable races across Lake Michigan, with the destination a few miles distant and a majority of the fleet stripped to bare poles to meet a squall, leading boats have taken the squall full canvas, forcing their close competitors to do likewise.

The sport is characterized by able skippers, able boats, and able crews. Also by the fact that on comparatively few boats are there any but Corinthian sailors.

Chicago has three yacht harbors twelve miles apart. The largest is the "downtown" anchorage, Chicago Harbor, three-fourths of a mile wide and one and one-half miles long, east of

Photo, courtesy of the Hotel Belmont

VIEW SHOWING THE NORTH END OF BELMONT HARBOR

Note the power craft moored at dock at north, and in stalls on the East side. Sheridan Road in the foreground

Grant Park, which has been developed so beautifully by the South Park Commissioners.

Chicago sail yachts fly the colors of three yacht clubs—Chicago, Jackson Park, and Columbia. The Chicago Yacht Club is an amalgamation of the Chicago Yacht Club with the Lincoln Park Yacht Club. In 1920, the Lincoln Park Yacht Club absorbed the Chicago Yacht Club, adopting the latter's name and their own flag. Thus the new club so created owns two houses and has its fleet divided between two anchorages. In 1923, a new station was built in the north side harbor at a cost of $180,000. The new clubhouse on the downtown site is expected to cost $1,500,000.

One Chicago Yacht Club quarters is on the lakefront at Monroe Street, directly east of the heart of Chicago's business district—five to ten minutes' distance from office to club.

The other two anchorages are off residence districts, north and south of the downtown harbor.

Belmont Harbor, where Chicago Yacht Club maintains its new floating club station and most of the racing fleet are anchored, is four miles north by Lakeside Boulevard, reached from the business district in fifteen to twenty minutes. This harbor is crowded with boats up to fifty and sixty feet in length. Permanent moorings are provided in order to permit yachts to moor closer together. Belmont Harbor is a beautiful sight from the windows of the hotels and large apartment buildings that line the shore boulevard at this point. The Chicago Yacht Club keeps its Belmont clubhouse and restaurant open here the year around.

On the south side of the city, in Jackson Park Harbor, opening directly into the lake, the Jackson Park Yacht Club has maintained a clubhouse and fleet for nearly thirty years. The harbor is smaller than Belmont, but more picturesque, surrounded by park and trees and sheltered from heavy blows.

Jackson Park numbers about thirty sailing craft in its fleet, and its sailors have always been known for skill and courage. The old 21-foot Seawanhaka-Lipton Class, of which three still remain in the Jackson Park Club, has furnished some of the finest racing ever had in Chicago and has developed many famous skippers.

Docked at the north end of the downtown harbor, is also the

Columbia Yacht Club, whose house is a well-conditioned and remodelled lake ferry. The yachts flying its burgee are moored close by in the north end of the harbor. These include a small fleet of Stars, its only regular racing class during the season. Columbia was organized shortly after Chicago Yacht Club. It was inactive for a number of years up to a short time ago, except that a few loyal members scheduled annually an open race to Michigan City each June. Started about thirty-six years ago, this race is the oldest regularly run open event on Lake Michigan.

While the Chicago Yacht Club, with its two anchorages and clubhouses, has a majority of the 200 sailboats enrolled in the three Chicago clubs, relations between the clubs are friendly.

Co-operating with the Lake Michigan Yachting Association, the governing body of the nine yacht clubs on the Lake, the clubs arrange annual programs which do not conflict. Over half of Chicago Yacht Club's races are open events, participated in by Jackson Park and Columbia boats. More vitality and popularity is attending the sport each year on Lake Michigan.

The plans of the Chicago Yacht Club for a magnificent new home on the waterfront downtown have been perfected and construction is expected to commence in 1928. Organized in 1875, the club has always had quarters in its present location, approved by the United States War Department. Credit for the progress on the present definite plans is due to Commodore George Woodruff (now serving his second term), assisted by an able directorate, including Richard G. Jones, Samuel Insull, Dr. W. L. Baum, Hollis Potter, Clark Wright, George Getz, and others.

The power cruiser fleet of the Chicago Yacht Club, numbering forty-five to fifty boats, which average sixty feet in length, is divided between the Chicago and Belmont Harbor anchorages.

The sail fleet presents many types and sizes, a few classes of which might be described.

There is a very active organization of nineteen "Pups" of small universal type open sloops which sail a separate schedule of nineteen races for the season championship. Included in this is the series for the Gehrman Trophy, which is a permanent annual prize. These little twenty-foot keel sloops are for the most part Marconi-

Duffney Photo

THE KETCH ESPERANZA, LARGEST SAIL YACHT IN THE CHICAGO YACHT CLUB FLEET
She is owned by Henry Berkhauser

rigged, carry 231 square feet of canvas, sail in all sorts of weather, and are extremely seaworthy. They develop many good sailors who graduate into larger boats.

Next in size are the six new S or "Eagle" one-design sloops, designed by a club member, Francis Early, and built in Michigan by Dachel-Carter. The class was brought into Chicago Yacht Club in 1926 by Commodore H. E. Potter, who helped finance and resell them to new owners. They are seaworthy and fast, and afford split-second finishes in some of their class races. They carry 440 square feet of sail, are raised deck type, and have cabin accommodations.

Sailing out of Belmont Harbor now are ten R-class sloops. They have been the most active racing class in Chicago for the past few years. Rivalry between the owners, most of whom are prominent skippers, is so keen during the season that last summer a special series of six Sunday morning races was staged for a silver trophy known as the Case Cup.

Most active in the bringing to Chicago Yacht Club of R-class sloops have been the late Ogden McClurg, Samuel Dauchy, Sheldon Clark, H. E. Potter, William Faurot, and Clark Wright. These men have skipped their own boats and sailed many very close races. Nancy, Sari, Ariel, Calypso, Ardelle, Fantome, Tomboy, Yank, Mitzi (ex-Katia), and Gossoon have all made yachting history. In 1927 the McClurg syndicate's Ariel and Dauchy's Nancy were tied at the end of the annual series for the Lipton Cup. In the sail-off Ariel won. In the class championship for 1927 Wright's Ardelle won first honors by a close margin.

The eight Q-class sloops in Chicago are divided between the Chicago and Jackson Park Clubs and have furnished splendid racing in the past seven years. Intruder, Siren (ex-Gray Jacket), and Chaperon are Marconi-rigged. Virginia, Jackson Park II, Nabob, Verona, and Princess are gaff-rigged. No boats have been added to the class since 1921, probably on account of the special activity in the smaller classes. They have proved to be consistent cup winners in all the open races where corrected universal time prizes are awarded in a mixed fleet of R, Q, P, and N boats.

Two series of open races for the Q-sloops are held each year.

Intruder won the 1927 series for the Virginia Trophy over Siren; while Siren won the Lutz Trophy, generally considered representative of the Q-class championship, in a similar series later in the season, with Intruder second.

Outstanding skippers of Q-sloops have been John O'Rourke of Intruder, L. L. Karas of Siren, Fred Porter and J. A. Hadwiger of Virginia, and Clarence Kraft of Jackson Park II. Malcolm Vail and Henry Rubinkam have also earned laurels in this class.

In the Chicago Yacht Club large sloop class, the chief representatives today are the famous P-sloops Intrepid, skipped by Donald Prather; and Joyant, skipped by Howard Baxter. Mavourneen ceased to fly C. Y. C. colors in 1925, when after fifteen years of active local racing, she was sold to John Painter of Detroit. The Larchmont O Celeritas was brought to Chicago in 1925 by Fred Price, well-known skipper, who won second place in the Mackinac Race that year. In 1926 she was purchased and raced by Julian Armstrong before being resold east.

Up to 1921, a number of 35-foot-class sloops raced with the P-boats on Seawanhaka rating for class prizes. Illinois, Larikin, and Seboomook were the principal representatives of what were the successors to the big topsail sloops of former years.

In 1925, James O. Heyworth brought the N. Y. Y. C. 50-footer Polaris II (ex-Mystic) to Chicago chiefly for the Mackinac Race. That year only eight of twenty-three starters finished and Polaris was one of those that did not successfully withstand the first night's pounding of a three-day nor'easter.

On account of the mixed character of the Chicago fleets, time prizes in the open events are awarded in two general divisions—Universal and Seawanhaka—with occasional class prizes in addition. This condition often results in yachts of extremely different types and sizes sailing on a handicap basis for a single prize.

Chicago Yacht Club has a large and representative fleet of able two-stickers, no two of which are of exactly the same type or of equal size or rating. A majority of them have power and their racing is confined principally to the half dozen across-the-lake races and an occasional regatta.

Lynn Williams' Elizabeth, George Orr's Fortune, and Julian

Armstrong's Tecumseh are the newest type schooners in the Chicago fleet. The latter two were classed as "racing type" in the 1927 Mackinac Race and were compelled to sail against universal sloops instead of other auxiliary cruisers.

Duffney Photo

CLARK WRIGHT'S R SLOOP ARDELLE, A NEWCOMER IN THE CHICAGO YACHT CLUB
She won the 1927 club championship. This remarkable boat is described in the paper on R boats. Designed by Charles Mower

The 80-foot ketch Esperanza, owned by Henry Berkhauser, is the largest two-master in Chicago. Her beautiful lines and clouds of canvas have earned for her the name "Queen of the Lakes."

She is today the only successor of the famous Mackinac competitors—William Hale Thompson's Valmore and Dr. W. L. Baum's Amorita.

In addition to these boats, there are some twenty-five or thirty yawls and schooners of various size of Seawanhaka or semi-Seawanhaka type. Swanee, a converted R-class yawl, shared honors the past season with George Fox's yawl Kayoshk II (ex-sloop Larikin).

Seawanhaka sloops in the Chicago Yacht Club are a fast diminishing class. Outstanding skippers in this division for the past dozen years have been Leonard Lambin, who has won countless prizes with his race-about Invader, and Gus Nylund, who succeeded to Invader's honors with his race-about Springtime, which he designed and built. Nylund is today one of Chicago Yacht Club's ablest skippers.

The Jackson Park Yacht Club fleet is composed largely of old type or Seawanhaka boats, with four of the Q-sloops. The club's annual schedule is a long one, with the Q's racing together, and the Columbia, Edith II, and LaRita racing in the 21-foot Lipton, or 30-foot Seawanhaka class. At the end of the season, the winners of the two divisions race on Seawanhaka time for the Bennett Cup, emblematic of the club championship.

Jackson Park has encouraged junior sailors, provides for them in its membership, and the training thus had by these youngsters is creating able yachtsmen for the future. A class of "kittens," small, open boats, is sailed throughout the season by the juniors.

Commodore Hallet Redmon, skipper of Columbia, and the Intruder's owners are the club's most prominent yachtsmen today. Jackson Park Yacht Club has given to Chicago some of its finest sailors. Its roster has included a large number of the names most famous in the annals of local yachting. While its fleet has never been large, it has included a majority of the old 21-foot Lipton sloops, built to a special rule for competition for the Sir Thomas Lipton Trophy, donated in 1902. This class has been called the sportiest class ever sailed on the Lake. About 36 feet overall on deck, beamy, and of extreme Seawanhaka type, they carried about 850 square feet of canvas and enormous spinnakers. Records

were made for setting and striking light canvas and reefing which are difficult to equal. The inboard light canvas work on board the R's or Q's today is easy work compared to that on the old

Duffney Photo

The Q-Sloop Siren won the 1927 Mackinac Race. She is owned by the Karas Brothers and W. L. Latimer. Note how Chicago sailors, even on the water, live with their sky-scrapers.

Lipton sloops. This big class bred a hardy group of yachtsmen. These boats competed for the Lipton Cup from 1902 until 1913. In 1917, the Cup was transferred to the R-class, which has sailed for it since then.

The sport on Lake Michigan is featured by a number of important cruising races.

First in interest and of national renown is Chicago Yacht Club's annual Mackinac Race. It is a classic that has brought Lake Michigan yachting more forcibly before yachtsmen of the world than any other race we have on fresh water. It has been essentially a big boat race, and its annals are chock-full of epic accounts. It is the race that most stirs the imagination and awakens the ambition of deep-water sailors, and tests the ships and seamanship of skippers and crews.

Some of the races have been sailed in a gale of wind, notably the race of 1911, when Dr. W. L. Baum's schooner Amorita, which holds the elapsed time record for the 670-mile Bermuda Race of 78 hours, 19 minutes, 15 seconds, set her famous record of a fraction over 30 hours for the 331-mile course. Others have been sailed in baffling, changeable airs that put a premium on experience and weatherwise skippers. Races have been sailed in heavy northerly blows that tested the endurance of ship and crew, as the races of 1914 and 1925.

And there have been races so closely contested that seconds separated the first boats, as in the historic duels between Vencedor and Vanenna, and between Dorello and Intrepid in 1926, when Intrepid won by 10 seconds.

The Mackinac Race has always been eventful. It has always had its epic side. And though the race has been sailed since 1904, with the exception of during the war period, it is a tribute to the seamanship and agility of the skippers and crews, and the staunchness of the boats, that no calamity has ever marred this severe trial. The only boat lost in all these years was Vencedor in the famous race of 1911, and her crew was fortunate in being brought safely to harbor.

The races for the Mackinac Cup present an interesting study of the evolution of fast-sailing yachts under the accepted time allowance rules.

In the early races, the big Seawanhaka topsail sloops held the advantage. Then came the big racing schooners of from 80 to 100 feet in length which could give time and still beat the topsail sloops and heavily-built, cumbersome "cruising" schooners.

Next appeared a type of fine-lined sloops, the first of the universal rule boats. Their dimensions earned them considerable time allowance from boats of earlier build. The P class sloops proved their speed and their seaworthiness, however, and compelled the acknowledgment that even if they had been developed to rate favorably under a rule, they were real ships in all sorts of weather.

For six years the P's dominated the race. Then the character of the fleet changed, and the big boats became fewer and fewer. During the period that the fleet grew smaller, on account of the loss of the big schooners and the diminishing of activity during the war, a new class—the R's—was brought to Chicago.

The tonnage requirements and club policy which had made the race an event for the larger boats were changed and the Q's were invited to enter in 1921. They were allowed three and a half hours' allowance from the P's, and in that year demonstrated their speed and staunchness.

Since 1921, the small sloops have dominated the race. In seven races, Virginia has won three; Siren one; Sari, and R-sloop, one; and the P-sloop, Intrepid, two races. Intrepid's races were won when head winds were encountered.

In 1927, the character of the fleet was such that the schooners and yawls with very few exceptions were distinctly outclassed by the universal sloops. Of older types and medium size and including several Malabar type boats, their owners urged a second division which would not include yachts of faster lines.

Commodore George Woodruff, accordingly, bought a handsome new trophy to match the historic Mackinac Cup, and the deeds of gift of the two Mackinac Trophies were so determined as to provide for competition for the two prizes in alternate years, by the separate divisions.

In the 1927 race, cruising division, the little ketch, Shalamar, beat the big Esperanza from which she received about 9 hours' allowance, by 4 hours, 41 minutes.

It is probably a safe prediction that the Mackinac Race will be governed by the universal rule for a number of years hence. Development of the fleet will probably occur by an increase in the number of larger sloops and fast two-stickers.

The Mackinac Race has been the largest single incentive for bringing new racing boats to Chicago. Yachtsmen who are most active in the one-design and rater classes are always eager to ship aboard a Mackinac entry.

Duffney Photo

O'Rourke Brothers' Q-Sloop, Intruder, 1927 Champion of Jackson Park Yacht Club

She has been a consistent winner

The course is interesting, and covers enough time so that various conditions are encountered. The passage through the narrow Wangoshance channel into the Straits of Mackinac requires real

navigation and judgment. And with the mixed character of the fleet, the weather encountered has always a bearing on a yacht's chance of winning the highly prized trophy.

A summary of the record of this important fresh-water race will prove of interest. (See pages 398–399.)

Next in importance is the Chicago Yacht Club Triangular Race, or Tri-State Race, which is sailed annually for special prizes, in three legs. The first leg is from Chicago to St. Joseph, Mich., 59 miles. The second leg, on the following day, is sailed south along the East Shore to Michigan City, Ind., a distance of 35 miles. The third leg is sailed back to Chicago, generally to Jackson Park Harbor, 34 miles, coinciding with the annual Michigan City Race of the South Side Club.

The race has been sailed of late years in two divisions—universal and Seawanhaka—under either the point system or total corrected times of the three legs. Up to 1921, this was an event for so-called five-ton, or larger boats, and produced some strenuous competition for those of the fleet, which, on account of their size, were not active in the short club course races.

It is a popular event, taking a large part of the sail fleet and a large number of power craft away on a three-day race, generally over Labor Day. A part of the pleasure of participating is the good fellowship and enjoyment had at the two summer resorts between races.

The Macatawa Bay Race

It is 93 miles on a northeast course from Belmont Harbor to Black Lake, Michigan, where the two resorts—Ottawa Beach and Macatawa—are on opposite sides of Macatawa Bay. The race was first sailed over a dozen years ago, when the Macatawa Bay Yacht Club was in its prime, sponsored by Charles Scates, the Secretary and "grand old man" of the Lake Michigan Yachting Association. An active skipper for years, "Charlie" has always been a stickler for correct interpretation of the racing rules and has served on innumerable race committees.

Four years ago the Dreadnaught Trophy was put up by Chicago Yacht Club as a three-time winner prize for this event. It has

Winners of the Mackinac Race

Date	Yacht	Class	Owner	Elapsed Time	Corrected Time	Starters
† Aug. 6, 1898	Vanenna	Sloop	.....	51 :00 :00	51 :00 :00	5
Aug. 3, 1904	Vencedor	Sloop	Fred A. Price	37 :46 :00	37 :46 :00	10
July 29, 1905	Mistral	Schooner	Dwight Lawrence	94 :10 :00	94 :10 :00	5
July 14, 1906	Vanadis	Yawl	Geo. S. Steere	62 :07 :46	60 :04 :10	13
July 20, 1907	Vencedor	Sloop	George Tramel	43 :29 :00	42 :26 :25	14
July 25, 1908	Valmore	Schooner	Wm. Hale Thompson	52 :21 :50	52 :21 :50	9
July 24, 1909	Valmore	Schooner	Wm. Hale Thompson	42 :33 :33	39 :51 :01	11
July 23, 1910	Valmore	Schooner	Wm. Hale Thompson	31 :24 :06	28 :45 :32	10
July 22, 1911	Mavourneen	Sloop	E. M. Mills	37 :57 :00	28 :31 :51	11
* July 13, 1912	Polaris	Yawl	J. O. Heyworth	52 :34 :05	52 :34 :05	7
* July 12, 1913	Olympian	Sloop	J. O. Heyworth, Synd.	53 :13 :29	49 :00 :49	7
Aug. 1, 1914	Olympian	Sloop	Frank J. Snite Roy M. Barcal	61 :36 :00	56 :36 :32	5
July 17, 1915	Leda	Sloop	Geo. B. Currier	68 :53 :22	66 :20 :32	7
July 22, 1916	Intrepid	Sloop	Frank J. Snite Roy M. Barcal	72 :16 :50	66 :30 :05	7
July 23, 1921	Virginia	Sloop	Carlos Alling	45 :37 :25	38 :57 :59	11
July 22, 1922	Intrepid	Sloop	Donald F. Prather Vernon E. Farrell	56 :35 :00	50 :21 :25	11
July 21, 1923	Virginia	Sloop	J. A. Hadwiger	62 :37 :26	55 :24 :27	14
July 19, 1924	Sari	Sloop	Benj. Carpenter, Jr.	56 :54 :30	44 :18 :36	22

July	25, 1925	Virginia	Sloop	J. A. Hadwiger	70:48:50	61:03:21	20
July	24, 1926	Intrepid	Sloop	Donald F. Prather Frank Hough			
** July	23, 1927	Siren	Sloop	George Woodruff	58:37:35	55:36:15	16
** July	23, 1927	Shalamar	Ketch	Karas Bros. & Latimer	59:31:58	53:52:04	13
				M. G. Herbert	67:58:15	59:01:51	15

† First officially recorded race.

* Race held only to Harbor Springs, via Milwaukee and Portage Lake, for Little Traverse Cup.

Elapsed Time Record—Schooner Amorita, Dr. W. L. Baum, 31:14:30 in 1911.

Corrected Time Record—Sloop Mavourneen, E. M. Mills, 28:31:51 in 1911.

Average number of starters in Mackinac Cup Races—12.

Average elapsed time of winner in Mackinac Cup Races—55 hrs. 9 min.

SMALLEST CORRECTED TIME MARGINS:

Intrepid beat Dorello, 1926, 10 sec.
Virginia beat Chaperon, 1921, 2 min., 7 sec.
Vanadis beat Naiad, 1906, 4 min., 37 sec.

LARGEST CORRECTED TIME MARGINS:

Valmore beat Illinois, 1908, 20 hrs., 03 min., 51 sec.
Olympian beat Neoga, 1914, 18 hrs., 43 min., 49 sec.
Intrepid beat Dorello, 1922, 15 hrs., 17 min., 12 sec.

** Two divisions—Racing Division for Mackinac Cup, and Cruising Division for new Mackinac Cup donated by Commodore George Woodruff.

been won once by Jackson Park II, once by Joyant, and twice by Intrepid. The start is made at 7 P. M. on a Friday and, with the varying wind conditions found on the course, averages from sixteen to eighteen hours for the winner.

The Michigan City Race

Columbia's Yacht Club's open race early each June to Michigan City, Ind., a distance of 37½ miles, has been held annually for thirty-six years. A large fleet invariably competes, the record being slightly less than 100 yards. It is held early in the season when northeast winds predominate, and a number of races have ended in squalls and half gales.

Class prizes are sailed for, also a Universal and a Seawanhaka time prize.

Around the southern end of the Lake, variable conditions are sometimes met with and occasionally this race is won by a boat sailing an inshore course around the curve of the shore.

The Saugatuck Race

Jackson Park Yacht Club has sponsored the race to this attractive summer port for a number of years. The course is N. E. 3/8 E, 89 miles. Held the week previous to the Mackinac Race, it attracts all those yachts which do not enter the latter and plan to begin their summer cruises at that time.

Saugatuck, "port of missing sailor-men," is located two miles inland up a winding river, on an attractive little harbor surrounded by heavily wooded hills. The channel is narrow and sailboats must be towed up the river. A large dance pavilion on the waterfront is one of the attractions for resorters and yachtsmen.

The Sturgeon Bay Race

In 1926, Chicago Yacht Club inaugurated the race to Sturgeon Bay, Wis., 201 miles north along the west shore of Lake Michigan. Attractive permanent cups were donated and those yachts not entering the Mackinac Race find this a real race.

The west shore is marked by manufacturing towns for the most part and only after Milwaukee, 81 miles north of Chicago, is

Duffney. Photo

The P-Sloop Intrepid has won numerous prizes on Lake Michigan, including the Mackinac Cup three times. Her owners are Donald Prather, Frank Hough and Commodore George Woodruff.

reached, does the country take on the character that has made Wisconsin famous for its beauty.

Sturgeon Bay is the entrance into Green Bay, where the cruising man can find a paradise second only to Georgian Bay and the North Channel. Idlewild, Horse Shoe Island, Ephraim, Marinette, and many other places of interest add to the cruising man's enjoyment in these northern waters.

Besides the above distance races, two annual open races of importance are the Lake Michigan Yachting Association Regatta, held under the auspices of a member club, and the Chicago Yacht Club Autumn Regatta. The latter is featured generally by heavy offshore winds.

The races over the 12-mile club courses start at 2.30 P. M., which enables the fleets to finish well ahead of the diminishing winds at sundown. Across-the-lake events are started at 7 P. M., and the Mackinac Race begins at 4 P. M. on a Saturday late in July.

During the past few years distance races have increased in number, and as all these races are open, Chicago, Jackson Park, Columbia, Milwaukee, Racine, and other clubs outside of Chicago combine to make the entry lists large ones. The Chicago Yacht Club sponsors a majority of the races in which the other Chicago yachts compete, and in 1927 the appropriation for its races was $6,335.

For the Chicago yachts which race to Mackinac, there is a cruise east into Huron, or south along the East Shore of Lake Michigan, or west across into Green Bay. The northern part of the Lake abounds in islands, harbors, and points of historic interest, and many chapters might be written about cruising in Lake Michigan.

EDITOR'S NOTE.—Donald Prather, author of this paper on Lake Michigan Yachting, started sailing at Jackson Park in 1915 as part owner of the 25-footer Seminole. In June, 1919, together with Vernon Farrell, he acquired the P-class sloop Intrepid. He served as Vice-Commodore of Jackson Park Yacht Club, and in 1920 organized the Lake Michigan *Yachting News*, now the official publication of the Chicago Yacht Club.

Sailing under the colors of Chicago Yacht Club since 1921, he has won the Mackinac Cup twice, the Stratford Hotel Cup, and many other trophies.

In 1924 he compiled a volume published by Chicago Yacht Club on the history of its Mackinac Race. His present partners on Intrepid are Frank Hough and Commodore George Woodruff.

Mr. Prather is of the opinion that Chicago yachtsmen may safely be divided by stating that 20% are interested in cruising only and 80% find their pleasure in racing. It is, of course, to be understood that 90% of those interested in racing combine the fun of cruising with that of racing the long distances Lake Michigan offers. One contest like the Mackinac Race combines all the features to be obtained by indulgence in the sport of sailing.

With the thought in mind of giving a little more comprehensive idea of the value, for cruising, of Lake Michigan, I have had incorporated in this note an abbreviated description of some of the places that may be visited.

Four principal regions offer cruising opportunities: the East Shore; the northern end of the Lake from the Manitou Passage to Mackinac; Green Bay; and the North Channel and Georgian Bay.

On account of their easy accessibility from Chicago, the ports along the East Shore see the greatest number of sailing yachts from the Windy City. In the limited time that many sailors can devote to a vacation, a great many cruises are made to ports south of Little Sable Point. The most popular ports on the lower East Shore are Saugatuck, Macatawa Bay, White Lake, and Portage Lake. Rarely is one of these summer resorts entered without seeing a number of Chicago yachts at anchor.

In the case of racers to Mackinac, most time on the sail south is spent in the northern end of the Lake—visiting St. Ignace Beaver Island (the old-time stronghold of the Mormons), Little Traverse and Grand Traverse Bays, Pine Lake, and South Manitou Island (on the shores of which lie the frames of countless lumber schooners of the old days)—and thence south to Portage Lake, White Lake, Black Lake, and home. The harbors are generally good, many of them landlocked, and except in the Manitou Passage, they are easy distances from each other.

Many yachtsmen sail over to Sturgeon Bay Canal on the West Shore, by which Green Bay is entered. Inside the Bay is beautiful cruising territory, with picturesque scenery at every hand. It is wild country, sparsely inhabited, and a cruise north from Idlewild (a summer resort) to Horseshoe Island and Ephraim, Washington Island, and Escanaba affords not only attractive scenery, but a need for careful navigation.

The extreme northern end of the Lake sees few yachts, because of the many small islands, shoals, and reefs, and the lack of good harbors.

Within easy distance east of historic Mackinac Island are Les Chaneaux, or the "Snows." Here is truly beautiful scenery, and thence east through into the North Channel is one of the finest cruises imaginable. Islands and shoal spots abound, and motors are almost a necessity. A cruise into Georgian Bay will take several weeks more—but the Lakes offer no finer or picturesque cruising grounds than here.

Power craft and the larger auxiliaries go farthest north and east during the summer period, while the majority of the yachts which enter the Sturgeon Bay and Mackinac Races return south via Green Bay or the East Shore.

From Chicago to Point Betsie, over 200 miles, there are no islands or shoal spots and the port lights along either shore make navigation easy. From Betsie north to the entrance to the Straits of Mackinac—about 100 miles—there is little shelter and a necessity for careful navigation. This part of the Mackinac Race, or a cruise to the Straits, is most interesting. South Fox Island, Harbor Springs, or St. James afford the only harbors of refuge, but only in cruising do any yachts take advantage of these shelters.

SAILING AT DETROIT

By Dr. A. F. Jennings and J. F. Whitehead

DETROIT is fortunate in its sailing waters, for close at hand are the head of the Detroit River and the lower end of Lake St. Clair. A half-day's sail away across Lake St. Clair is the region called the Flats, made up of the delta of the St. Clair River with its low marshy islands, its deep channels, its clubs and summer resorts. A day's sail to the south is Put in Bay, a beautiful harbor lying amongst the islands of the western end of Lake Erie. Here each July the Inter-lake Yachting Association holds its week long regatta and there are assembled the racing and cruising fleets from Lake Erie, Detroit, and Lake Huron. Only a day's sail to the north is the lower end of Lake Huron and across this lake lies the wonderful cruising ground of Georgian Bay, where the bluff headlands, outstanding reefs, deep bays, and landlocked harbors are without equal. The shores are mountainous and covered with dense forests and the waters have game fish in plenty. The only signs of civilization being small fishing or logging villages composed of isolated cabins, and in these the sportsman is always welcome. Further to the north lies Lake Superior, coldest, stormiest, and wildest of the lakes.

In the Detroit district two local types of boats have been developed. One of these, the double cat, is a half-decked centreboarder, light of build, and sharp sterned. This type was adapted from Scandinavian designs built for commercial fishing which, with refined lines, was the only type of small yacht used for many years. Today there are few of them left, but fortunately the design has been preserved in the lines of West Wind published in *Yachting* of this year. It was in such a boat, 23 feet long, that Sir Ernest Shackleton sailed 750 miles of the Antarctic Ocean to bring a rescue ship for his crew marooned on Elephant Island.

Our other local type has grown to tremendous popularity and has provided the keenest racing of these waters. Starting with a small fleet of 22-foot V-bottom cats at the Detroit Yacht

MAP OF LAKE HURON AND LAKE ERIE SHOWING LOCATION OF DETROIT

Club, the class has evolved by stages into as beautiful a little racing ship as one will find anywhere. In 1909, President Taft, interested in the waters near Put in Bay and Toledo, gave a cup for annual competition to this class through the Toledo Yacht Club; but in 1923 the cup was withdrawn and a trophy was given in its place by the late Commodore S. O. Richardson of the Toledo

Yacht Club. After four years of racing this cup went to the permanent possession of the Toledo Yacht Club when a new one was presented by Commodore Richardson, which is still in competition and is emblematic of the championship.

Every Saturday and Sunday large fleets of these boats race both in club-owned and private-owned classes, and the largest fleet is at the Detroit Yacht Club, where the Oakman Cup and other trophies are raced for. The Detroit Boat Club Yachtsmen have another large fleet and they have presented the Nall Trophy

SCHOONER AZARA, OWNED BY FRANK BAKER
The Azara will make a trip around the world in 1928

for open competition. The Toledo Yacht Club, home of the Leudtke Brothers, who have done so much in developing the present model, has a splendid fleet, and smaller fleets are owned by the Edison Boat Club and the Masonic Country Club. They are delicate little things and tricky to handle, yet in 1910 Joe Grasser sailed one across Lake Erie from Toledo to Put in Bay with storm trysail and canvas-covered cockpit in a hard summer northeaster. Originally centreboarders with open cockpit, some of the later boats have had a small keel and a short cabin. The Marconi rig has, of course, superseded the gaff.

The development of yacht design, apart from the models just spoken of, has been similar to that of the eastern seaboard. From 1880 to 1900 the deep, narrow, clipper-bowed cutter was the accepted model, with an enormous sail spread; these boats developed skippers and crews of the greatest skill who a few years later ably guided the youngsters and novices entering the game, when yacht design was at its lowest point. Every year until 1908 at Put in Bay, the old Alice Enright sailed around the race course, the only surviving member and still holding her own with the new swift 21-footers. These ships set records for speed that have never been equalled since; the Papoose, for instance, sailing from Detroit to Oswego on Lake Ontario, a distance of about 400 miles, in 52 hours, exclusive of time in the Welland Canal.

Alden Schooner, Suez, Formerly the Sachem, Built in 1925, and Owned by Howard Grant of the Bayview Yacht Club
Winner of the Larchmont, New York, to Gloucester, Mass., 375-mile race in 1925

From 1900 to 1912, the low point in naval architecture was as evident here as elsewhere. The Canadas Cup brought out the 30-footers, Genesse and Cadillac; while the Walker Cup of the Country Club brought out a fleet of 21-footers. These boats were wide and flat, fast in smooth water but beasts to handle, and in the end dangerous. There were many youngsters in the game then and it is still a marvel how we thrashed those skimming dishes all over the lakes, dousing jibs on the low bowsprit or getting down the reefing tackle on the long boom. We never could have done it had we not obtained the aid of the hardened sailors trained in the cutters, and when we were finally through with the class we too knew how to handle ships.

It was indeed with much pleasure and relief that the older sailors saw the new Universal Rule boats take the place of the twenty-ones. Psammiad and Prammiad II and Lakewood were the first boats to appear in 1913, and then Neagha in 1914. Pam, Clarice, and Melba (later Elyria) came out in 1916, and the latter boat persistently remained with the leaders of the Inter-lake Yachting Association until 1926, when Lightening finally surpassed her. Even then there is some doubt that it could have been done had not Elyria, without competitors at her home port, suffered from indifference. Elyria has represented the Inter-lake at the last three races sailed for the Richardson Cup, emblematic of the championship of the Great Lakes. Yank, of Toledo, and Goblin, of Cleveland, flashed brilliantly for a year and then disappeared to other waters. Recently Rueida II (renamed Ste. Claire), Rueida III (now Bernida), Lightening, Ardette, Quiver, Lascar (now Rascal), and Nordic have been added to the fleet. Gossoon has been purchased for the coming season.

For some time the Parsons Memorial Trophy has been the R-class prize at the Inter-lake meet and the only trophy for the class in these waters. In 1927 Mrs. Seymore H. Knox, of Buffalo, donated the Northrop Trophy which was first raced for in Buffalo, in June, 1927, and won by Ardette, of Detroit. The cup was then given to the Inter-lake Yachting Association for yearly competition and was again raced for in July. This time Scorpion, of Buffalo, won the series and the cup returned home for the

year. In 1922 the late Commodore S. O. Richardson, of Toledo, gave a cup to the R-class to be raced for every other year by one representative from the Canadian fleet, one from the Lake Michigan Yachting Association, and one from the Inter-lake. The last race sailed at Toledo in 1926 was won by Eleanor, of Toronto.

YACHT CHARLYN
Owner, P. Williamson. Winner of Mackinac Race, DeRoy Trophy, 1926

The R-class has grown steadily in popularity. Whether the "sixes" can displace them remains to be seen, but we doubt that a boat with an open cockpit can ever be accepted, because, with our short sharp seas and sudden squalls, we are compelled to sail too much under water.

Considering performance in sailing alone, the racing boats

developed under the Universal or International Rules are satisfactory for our waters. Whatever modifications might be made in shape of hull in the future, it will still hold that racing craft must be narrow, deep, keel boats, and local conditions do not favor such boats. To reach any cruising objective in these waters, one must fight stiff currents, prolonged calms, and shoal waters; it is therefore true that a boat may be deep without meeting difficulty, but a deep draught boat without an engine presents many serious obstacles.

While the R-class, or its successor, will always hold favor with the racing group, the larger classes will never attain popularity, and at present the strong supporters of yachting are thinking along other lines. They favor good staunch cruisers with engines, and they want to race these cruisers in open waters, over long courses and under fair handicap. This year, the Detroit Boat Club held a 24-mile race in Lake St. Clair for cruisers only, but unfortunately a calm prevented a finish within time limit specified. A new idea, however, was started and more races of this type must be provided; this brings us to long-distance races.

Occasionally port-to-port races have been held but they have never become a feature. In 1906 a long-distance race was held from Port Huron, with Mackinac Island the destination. A howling northeaster compelled the three starters to close reef, and the City of the Straits and the Sultana, big cutters of the earlier days, in too poor condition to stand the pounding, soon withdrew. The Sitarah, a big ketch, went to shelter after 60 miles of beating, but later finished the course.

This quieted the ambitions that were stirred by the yearly performance of the Chicago fleet, but some of us remained restless until 1908 when the Toledo Yacht Club gave a long-distance race of 90 miles around the western end of Lake Erie. This first race, sailed in a howling northwester, being won by Agawa, the first of the modern cruiser fleet. Other races were held yearly until 1914, when, in a smashing southwester, one of our finest captains was swept overboard and most of the fleet ran for shelter. It is interesting to note that Lakewood, an R-boat, came through and won the race. After this the subject again quieted down,

Photo by Adams

START OF THE RACE, MACKINAC—PORT HURON, IN 1927
This is one of the greatest sailing events in Detroit waters

it being apparent that neither our boats nor our sailors were ready for this type of going.

Still the fires of restlessness smouldered, with the result that in 1919 the Bayview Yacht Club, a new and unknown organization, scheduled a 60-mile night race around Lake St. Clair. This course has been sailed once and sometimes twice each season since, and is one of our best local events. The Bayview Yacht Club Cup is the prize for unrestricted competition and the Free Press Trophy is for schooners and yawls. In 1924 the Bayview Club chartered the schooner Lloyd W. Berry and sent a crew to enter the Bermuda Race. Captained by Com. William A. Wilson and navigated by Mr. Herbert Stone, they took first in the fisherman type class.

At this point the urge for a real deep-water race to Mackinac became insistent; again, and to their great credit, the Bayview Yacht Club took the lead and arranged the race to be held on the same day as the Chicago-Mackinac Race. The fleet that assembled at the starting line at Port Huron was not ideal, because while a few of the boats were well equipped for the struggle, the others were old and not in the pink of condition, and the crews though willing were for the most part inexperienced or out of form from prolonged inactivity. With some doubts, but in order to encourage everybody, and at the insistence of the owners, three R-boats, Bernida, Neagha, and Rascal were allowed to race. By good fortune their crews were composed of men trained in cruising and in the handling of the old cutters and the twenty-ones.

A few hours after the start a northeast gale, followed by a nor'wester, made the going bad, and after much buffeting, all but one of the cruisers took to shelter, including the famous Typhoon with gear broken and crews out of the running. Then to the surprise of those waiting anxiously at Mackinac, in popped the three Rs, rigging sound and crews on deck but rather wet. The one cruiser to hold to sea, the Suez, was sailed by Commodore Wilson with his crew of Bermuda racers.

This race revolutionized the local aspect of yachting because here was a struggle worth while. Now the stout cruiser became a racer, to be sailed and groomed with the same skill and en-

thusiasm as an R-boat; and shorter races presented the opportunity to train crews, to learn canvas handling and to study performance. Yachting had at last come into its own, for the next year saw a fleet of eleven good boats at the start and in 1927 there were eighteen entries. In 1926, Picaroon, Kittywake, and Nawanna were added to Urchin, Typhoon, Red Arrow, and Charlyn. In the spring of 1927 Barbette, Hostess II, and Squall joined the local fleet, while in Saginaw there were Sauk and Aurora III, and in Erie, Grace. In the summer the new Suez (ex Sachem) and the big three-masted schooner Azara were brought here, and more are coming. Fifteen splendid, modern, cruising boats is quite a fleet.

The Aaron De Roy Trophy is the prize for the Mackinac Race. Charlyn won it in 1926 and Barbette in 1927. In the latter year the Yerkes Trophy was donated for schooners, to be sailed for without time allowance, and was won by Picaroon 4 minutes ahead of Kittywake, after 240 miles.

In order to eliminate friction, the De Roy Trophy is open to cruisers only, the racers having to be content with their special prize. The Universal Rule is at present used for handicapping cruisers and in 1927 the displacement restriction was removed. This rule proved satisfactory for existing boats, as is shown by the victory of Picaroon (an ocean-going type) over the rest of the fleet in the St. Clair Race in September. The rule has, however, its weakness, of which advantage could be taken, should one care to build especially to beat it. It is hoped that we will soon have some rule in which the beam factor is present, such as that adopted for the Bermuda Race in 1928.

It might be worth while to speculate (for the benefit of designers and coming owners) on the type best suited for our waters. A staunch hull is necessary but not of the weight for ocean work; because our seas, while nasty and very wet, do not strain the boat as ocean seas do, nor are we compelled to stay out in real bad weather for days at a time. The winds are variable, mostly light, but when she blows she blows plenty. We like to see the ocean sailor who brings his boat to our waters and boasts she has never been reefed. He will reef soon enough on the lakes,

on account of the sudden squalls in which a boat's canvas must be quickly lowered. The Sultana, a big cutter, was caught in one of these and, having cabin deadlights open, she sank; the

R-Boat, Gossoon

Designed by Burgess, and owned by Commodore T. P. Archer of Bayview Yacht Club. It is interesting to read the boat's history in the paper in this book on R-class.

dinghy, fortunately, staying on top. Either keel or centreboard can be chosen—one of us declares his next boat will have deep keel. The important feature is that the hull be designed with an eye to real speed and that the rig be one that can be easily

and quickly handled. Here is an opportunity for the designers to work out a fast ship while retaining all the features that go to make up a cruiser and much will depend upon the measurement rule.

The Detroit Boat Club is the oldest yachting organization here, having been founded in 1839 for the purpose of encouraging water sports. At present, a sub-group, the Detroit Boat Club Yachtsmen, carry on the sport, enthusiastically backed by the parent club, which has provided the Nall Trophy for the 22-foot cats and the Yerkes Trophy for schooners in the Mackinac Race.

The Detroit Yacht Club is the most active in local races and each season stages a series of three races for all classes; besides which, continuous competition is provided for the cats. The Sweepstakes Race, held by this club each September, is the classic of the river. It was originally a big boat event, 21 miles in length, but recently, with the tremendous number of small craft competing, it has been shortened to 12 miles. The Gardner Trophy, the Gardner Cup, and the Pingree Punch Bowl are the prizes; and to read the names engraved upon them would be to recite the history of yachting in Detroit.

The most stirring race was held in 1900, when on the first day no race was held because of calm, but on the next day the Galveston gale set in. The boats fought their way around close-reefed, and after the race a tug was necessary to tow the boats in to their moorings. The Sultana, being the largest, gave up her place in the line in order that the smaller ones could be taken to safety. Soon she could no longer carry a reefed main and then every one of her jibs went out, after which she ran across the lake to the Flats under bare poles. Since the Country Club gave up its yachting department to become a land sport organization and discontinued the series for the Walker Cup for the 21-footers, there has been no real race week held here. With the present enthusiasm, however, such a series may again become a fixture, especially if the cruisers are included.

The Toledo Yacht Club has always been a leading factor in sailing, and at present its interest centres about the 22-foot cats, in which class it has been a leader. The Edison Boat Club, the

Masonic Country Club, and the Walkerville Clubs all have splendid fleets and compete in all the regattas. In 1927 the Grosse Pointe Club started racing with fifteen sloops, one design and twenty-five feet overall. The Grosse Pointe Yacht Club is building a fine home and harbor on the shores of Lake St. Clair and should become a leader, inasmuch as the present tendency is to demand a race course in the lake rather than the river. The Bayview Yacht Club, so prominent in cruising races, is erecting a new house at the head of the river.

Such in brief has been the yachting story of Detroit. Here are sheltered waters for the little boats, open waters for the big boats, and there is competition in plenty for everyone.

EDITOR'S NOTE.—The writers of these papers are men of large experience and for that reason what they have to say is of much value.

Dr. Jennings has had many and varied sailing adventures since 1903. His father owned a small yawl at that time and in this he cruised the great stretches of Lake Superior and Lake Huron. In 1905 Dr. Jennings was successful in winning the Lipton Trophy in Chicago, when sailing the 21-footer, St. Clair.

Not only is he an extensive cruiser, but, together with his father, was a pioneer in favoring small schooners for use on the lakes. In 1916 they built the large knockabout schooner, Fontanalis—68 feet overall. Since 1920 the doctor has owned and sailed various small boats and was a participant in the Port Huron to Mackinac Race of 1925, in which he sailed one of the R-boats.

Mr. Whitehead, too, has been an ardent devotee of sailing since he was a youth in school and he first sailed in small cats and sloops at Harbor Beach, Michigan. He crewed on the sloop Urchin in the 1925 Mackinac Race. After this race Mr. Whitehead was determined to have a boat of his own. His brother-in-law, H. L. Pierson, being of the same mind, they purchased in the fall of that year a new John G. Alden 43-foot overall, 32-foot, 6-inch waterline, 11-foot, 8-inch beam, and 6-foot, 4-inch draft, gaff-headed auxiliary schooner, named the Picaroon. This boat brought fame to Mr. Whitehead, for in the Mackinac Race

of 1927 he was the first one in, winning the Robert G. Yerkes Schooner Trophy and getting fifth place on corrected time, in the race proper.

Mr. Whitehead takes an active part in many activities relative to sailing around Detroit, and has been on the Board of Directors of the Detroit Boat Club Yachtsmen for the past three years; in 1927 he was promoted to the position of Vice-Commodore. He is also a member of the Bayview Yacht Club of Detroit and in 1927 served on the Mackinac Race Committee.

YACHTING ON LAKE ONTARIO LOWEST AND LOVELIEST OF THE FIVE GREAT LAKES

By C. H. J. Snider

ARE you for a cruise on Lake Ontario? Good. Here we are in the clean white limestone city of Kingston, at the foot of the lake, the Thousand Islands of the St. Lawrence behind us, and two hundred miles of bright blue water ahead. Let's go.

What about our craft? There are dozens of types and hundreds of specimens to pick from among the yachts. Here's a schooner, like the Haswell, which A. Emilius Jarvis made famous by sailing from Lake Ontario to Jamaica and back. The Haswell is 60 feet long on deck, 44 on the waterline, fourteen-foot-six beam, and eight-foot-four draught. In addition to the Jamaica trip, the boat has twice won ocean races across the Pacific since being sold in California. We cannot do better, and we might do a whole lot worse, than take a sister to the Haswell, which is small enough to negotiate the lake harbors in comfort, and big enough to take anything Lake Ontario can send along.

Lake Ontario cannot compare with either the Atlantic or the Pacific in fury, but it can overmaster the stoutest craft. Eight knot strength is the average summer breeze, and while squalls occasionally occur, they give fair warning and soon blow out. But a 40-mile gale, with short seas running 15 feet high, sometimes scourges the lake even in summer time, and in spring and fall the wind may attain a velocity of 65 miles an hour. To "take anything Lake Ontario can send" a yacht has to be as large and as well found as the aforementioned Haswell. But as ports are frequent, and shelter is seldom farther to seek than 20 miles, quite tiny craft can coast the lake in safety.

We have the choice of three courses "up the Lake" from Kingston. In Ontario we say "up" for westward and "down" for eastward, because all the water of the Great Lakes flows east-

wardly through Ontario with almost imperceptible current, to escape to the sea via the St. Lawrence River.

From Kingston we can strike a midlake course, which means being out of sight of land as soon as we have "sunk" the islands at the foot of the lake. Ontario looks exactly like the ocean, once you leave the shore, except that the long heave and swell of the ocean is absent. On either hand a clean-cut horizon seems to

run to infinity; water, water, everywhere, and millions of gallons of it to drink; for this is clear and fresh and sweet, 123 fathoms deep in the "deep hole," and 50 miles from shore to shore. But, as scenery, such an endless stretch of blue may be monotonous. There is deep water to within a mile of the shore, almost everywhere and in many places large craft sail within a quarter of a mile of the beach; consequently it is more interesting to follow the coast.

We can steer south for fifty miles across the broad foot of the lake, and pick up the south shore at Oswego, and follow the United States side; or we can take the Canadian side and get up by two routes, either "outside," in deep water, passing the great peninsula of Prince Edward County on our starboard side, or "inside," leaving Prince Edward to port.

This gives us a hundred miles of winding through the sheltered Bay of Quinte, where the warm water is bright brown with vegetable dye, and every gallon has a million tiny plants like golden dust motes. Yet it is safe to drink and safe to those that follow the channels to navigate a boat of 10-foot draught.

Summer paradise is the Bay of Quinte, with birds singing all day long in the woods on either bank, and good fishing in every

TORONTO BOAT CLUB COMING INTO THE HARBOR

This rare old print from Gleason's Pictorial, Boston, Saturday, July 30, 1853, is precious as establishing the various types of yachts then in use on Lake Ontario. Its topographical accuracy makes it exceedingly probable that the yachts shown are actual portraits.

nook and cove. Sometimes the shores are steep-to, as at Glenora, with its Stone Mills and Lake-on-the-Mountain, and from the deck you can pick blackberries from the limestone crags. Elsewhere are stretches of shoal water and marsh, haunts of ducks. Rich farming country surrounds the Bay, with brisk towns, large and small, like Bath, Picton, Deseronto, Napanee, Trenton, Belleville and Brighton. Almost any place is safe anchorage if your ground tackle is good, for the sea cannot make up. The shores are never more than six miles apart; in some places only 400 yards.

A 6-mile canal, a channel without any locks, cuts the narrow isthmus which connects the Prince Edward peninsula with the main land at the western end of the Bay of Quinte. Passing through it, at Presqu'Isle we emerge into Lake Ontario and our track unites with the one we would make coasting up Prince Edward by the shelterless, but shorter, outside route. For the next hundred miles ports are plentiful—Cobourg, Port Hope, New Castle, Bowmanville, Whitby, Toronto, Oakville, and Hamilton, all available for large yachts, and in addition, Oshawa, Frenchman's Bay, Port Credit, and Bronte, offering shelter for small ones.

Along the south shore ports are fewer and farther between, and as the bottom is shoal for some distance, a wider berth has to be given the shore at places; but from Hamilton, at the head of the lake, on the fine enclosed water of Burlington Bay, daylight runs would carry us all around the south shore back to our starting point at Kingston. We would look into Port Dalhousie and Port Weller, Welland Canal Terminals, in Canadian territory, the Niagara River, which is the boundary line, and the United States ports of Olcott, Oak Orchard, Rochester, Sodus, Fairhaven, Oswego, Henderson Harbor, Sackett's Harbor, Chaumont Bay and Cape Vincent.

Thus after nearly four hundred miles of coasting we have circled the lake, taking—as long as we choose. The schooner Haswell made the voyage from Hamilton to Kingston in 20 hours in 1921; but two weeks can be spent very pleasantly on the same course.

Lake Ontario is such a splendid yachting field that it has produced all manner of craft, yachts for every requirement. For creeping into the numerous creekmouths and coves centreboarders have been popular. But the high quick seas of the open lake are hard sledding for shoal-draught craft, and the tendency is towards keel boats. The sailing dinghy, which is popular from one end of Lake Ontario to the other, is a centreboarder, and adventurous youths sometimes coast the entire lake in dinghies, hauling out on the shore for the night, where a smooth beach invites. But such lake navigation is rather in the nature of a stunt. It can

be done, but it is strenuous. I have twice crossed Lake Ontario in a 16-foot skimming dish with 7 inches freeboard, once with a crew, and once single-handed; but I would not recommend the practice.

Lake Ontario is navigable for the smallest craft, from one end to the other, if they choose their weather and are well handled. Centreboard sailing skiffs, 25 feet overall, 7 feet beam, with hulls drawing only a few inches of water, were formerly very numerous in large enclosed harbors, like Burlington Bay and Toronto Bay, and they used to coast around the lake on summer cruises, hopping from port to port. But the sailing skiff has dwindled in numbers and popularity, and the smallest craft now likely to tackle the open lake is the "bird class" which came into being last summer. Five of these were built in Toronto for members of the Royal Canadian Yacht Club and the Oakville Club, in the pretty little harbor of that name, 18 miles to the westward on the north shore. They are 18 feet overall, named after winged creatures such as F. F. Wilson's Night Hawk, some with open cockpits and some self-bailing, and a moderate sail plan of 250 feet; but these are all keel boats, with outside ballast.

Next in size, and more numerous, are the C-boats or Bing-boys, a one-design class begun by the Royal Canadian Yacht Club in 1923, and adopted extensively by other clubs. These are able sloops, with tall Marconi masts. They are 25 feet overall, and 6 feet, 6 inches beam, and draw 4 feet. They have 350 feet of sail and are decked over completely, the deck forward being raised, and giving them good freeboard. There are a dozen of them on Lake Ontario now, and the Cricket and others of this class have sailed the lake from end to end, leaving Toronto and racing in the L. Y. R. A. regattas at Kingston, Ontario, and Henderson Harbor, New York.

The Universal Rule of Measurement has been in force on Lake Ontario for nearly twenty years, and has had a marked effect on yacht design. Going back into history, it is established that there were "yachts" on Lake Ontario in the eighteenth century. But these were government vessels, used for carrying dispatches and passengers. Yachting, as a private sport, was flourishing in

Toronto as early as 1832, for an advertisement of that year offered for sale "the fast sailing cutter Dart, 22½ tons burthen, with or without rigging, sails and other furniture." She belonged to Captain, the Hon. John Elmsley, R. N., of York, now Toronto. The earliest authentic picture of lake yachting is a

Toronto Bay, centre of much sailing activity of Lake Ontario, forms the background of this scene of the dedication of the Royal Canadian Yacht Club's memorial sundial, a bronze and granite capstan on which are engraved the names of fifty-nine members of the club who gave their lives in the Great War.

valuable engraving in *Gleason's Pictorial*, attributed to Mr. William Armstrong, a Toronto artist and ardent yachtsman. It shows the "fleet of the Toronto Boat Club coming into harbor" in 1853, and it is probably quite accurate. The yachts shown are two cutters, a schooner, a sloop with Bermuda rig like our modern Marconi, and a lugger. The Royal Canadian Yacht Club was founded in 1852, as the Toronto Boat Club, and the

rigs and models shown in this picture correspond to those of yachts known to be in the club's first enrollment.

Up to 1884 the tonnage system of measurement was in vogue. It produced full-bodied yachts with short overhangs and long spars, speed being obtained by increasing sail-area. Both keel

ALL TUCKED AWAY FOR THE WINTER

A corner of the Royal Canadian Yacht Club's marine yard, showing the club's famous fleet of P-class yachts in winter quarters

yachts and centreboarders are found in the Royal Canadian Yacht Club's fleet lists from the earliest days. In 1884, when the Lake Yacht Racing Association was formed by yacht clubs in Toronto, Hamilton, Kingston, Belleville, Oswego, etc., embracing both sides of the lake, the Seawanhaka Rule was adopted. This measured yachts by taking half the sum of their waterline length and the square root of their sail-area. It was a good rule until it produced skimming dishes. It was followed by a Restricted Rule, which laid down hard and fast dimensions for given waterline lengths. This was a good rule, for it was only adopted after

drawing curves through the dimensions suggested by the best designers of the time, and boats built under it in 1903 and 1905 are still racing and winning championships.

The Restricted Rule was displaced by the Universal in 1907, however, which brings us back to the point where we split tacks with the little Bing-boys. The most prolific class under the Universal Rule has been the R-boats, or 20-raters. Swamba, Royal Canadian Yacht Club, was the first of these, in 1910.

Universal Rule P-class sloops have provided excellent sport for the last eight or nine seasons in the Royal Canadian Yacht Club, and the fleet of from six to eight have very even racing, with the season's championship in doubt always up to the race and sometimes—as in the year 1927—long after the last race is over. The picture is not a mere " double exposure " but shows two snapshots taken during a cruising race to Port Dalhousie, across Lake Ontario from Toronto. The snapshots were made from the cockpit of one of the contestants at an interval of thirty-five minutes. They show practically no change in position of any of the boats after four miles of sailing. Even the spot of sunlight on the clew of the nearest yacht's mainsail has hardly shifted. The P-boats shown, from left to right, are: Messrs. Hill Brothers' Cara Mia, J. P. MacGregor's Nutmeg, Dr. Gardner's Italia. The fourth member of the racing fleet, which had to sail equally well to make the pictures possible, was Mr. Harry Strange's Stranger.

There are now more than a score of R-boats on the lake, Rochester having six or eight, Watertown three or four, Oswego one, Kingston two or three, and Toronto six or seven. Indecision as to the number in each port is prompted by the fact that they are changing hands continually, and a Kingston boat of 1927 may be a Toronto boat of 1928.

The original Swamba was of about 20 feet waterline, 32 feet

overall, 7 feet beam and 5 feet draught. The tendency has been to make these boats longer and deeper, until 40-foot lengths and 6-foot beams have been threatened or achieved. More and more weight has been transferred from the wooden hull to the lead ballast, making building more and more costly. Vitesse of Rochester, winner of the George Cup in 1927, emblematic of the championship of Lake Ontario, is said to have cost her owner, Mr. W. P. Barrows, $11,500.00. Swamba was built for $2,500.00.

Entrance to the harbor of Oakville, Ontario, with a little R-boat, close-reefed, tackling the thirty-mile tussle with the east wind for Port Dalhousie, on the opposite side of the lake.

The class has been popular, because the cost was within the means of an ordinary quartet of men to finance, build, and handle. (The R-boats are raced with a crew of four), but increasing costs have discouraged new blood. There will be no more Canadian building to the class, and American recruits for it henceforward are likely to be second-hand R-boats bought on the Atlantic

coast. From present appearances, R-class and the Universal Rule have both shot their bolt on Lake Ontario. They will be replaced by classes under the International Rule, which has found wide acceptance.

And yet the R-class sloops of Lake Ontario have been good boats in their time. Twice they have won the championship of the Great Lakes, against representatives of Lake Michigan and Lake Erie. Nayada of Toronto, designed by T. B. F. Benson, naval architect, won it at Chicago in 1924, and Eleanor of Toronto, from the same board, won it at Toledo in 1926. The R-boats are, of course, completely decked over, with cabin trunks and cockpits, usually self-bailing. There is room in them for four men to sleep, but at the best they make rather snug quarters for continuous cruising. Modern R-boats are all rigged as Marconi sloops.

Another very popular class under the Universal Rule has been the P's, two sizes larger than the R's. These are, roughly, over 50 feet overall, 30 feet or more waterline, 10 feet or more beam, and 7 feet draught, with sail-area around 1,400 square feet; quite moderately rigged, in jib-and-mainsail sloop fashion. They have good cabin accommodation for a crew of six or seven men on a cruise, and a fine turn of speed. Like all the other racing classes among lake yachts they are keel boats. The centreboarder vanished as a sporting proposition in 1901. The Royal Canadian Yacht Club has had a fleet of from six to eight P-boats. The first to arrive, Mr. Norman Gooderham's Patricia, was built in 1911, and in 1927 she won the season's championship for the fourth year in succession. She has been owned and sailed for ten years or more by Mr. T. K. Wade of Toronto. Rochester has two P-boats, and one of them captured the Fisher Cup, a classic of the lakes dating back to 1874, from Cara Mia of Toronto, last summer, in an international contest. By resolution the Royal Canadian Yacht Club has adhered to the original gaff rig for P-boats, to avoid the hardship and expense of modernizing a large fleet into Marconis; and the Rochester Yacht Club, New York, very sportingly re-rigged its Marconi champion in accordance with the Royal Canadian Yacht Club restriction.

AZARA

Azara, as Commodore Gooderham's flagship Oriole III, flying the Royal Standard when the Prince of Wales was entertained on board, August, 1919, at the Royal Canadian Yacht Club, Toronto. To the left is Commodore Gooderham's present flagship, Oriole IV.

The P-boats form the second division in the classifications of the Royal Canadian Yacht Club and the Lake Yacht Racing Association. The first division is a mixed class, to include the larger yachts, measuring N and M and upwards under the Universal Rule. The largest fleet brought together in this division was at the Canadian National Exhibition regatta in Humber Bay in 1927. The starters were Mr. R. S. McLaughlin's three-masted schooner yacht Azara, 113 feet overall, Commodore George H. Gooderham's Marconi ketch Oriole IV, 95 feet, Rear Commodore Norman Gooderham's schooner Yolanda, 65 feet, Messrs. Hubert H. and Norman Macrae's cutter Strathcona, 60 feet, and Fleet Captain E. K. M. Wedd's syndicate cutter Gardenia, 62 feet. Gardenia won two of the three races, and Strathcona the other. The cutter is a vanishing rig on Lake Ontario. Once very popular, only three exponents of it remain, and none of them is new.

But the schooner is gaining in popularity all the time. Cutters and sloops are being re-rigged as schooners, and new yachts of 20-foot waterline and up are being built for that rig. The staysail schooner, which eliminates the gaff foresail altogether and uses a Marconi or leg-of-mutton mainsail, was introduced by Mr. J. G. Morrow of Hamilton, when he re-rigged the P-class sloop Seneca in 1926. In 1927 the late and lamented Stuart D. Lansing, Past Commodore of the Crescent Yacht Club, adopted the rig for his schooner Alice, and turned her from an in-and-outer into a consistent winner. The old steel cutter Vreda, which sailed out from England to Lake Ontario in 1888, has also been re-rigged as a staysail schooner. She now sails from Hamilton.

With such facilities for sailing—plenty of good harbors, 200 miles of open water of an average width of 30 miles, no tides, no currents, of consequence, and a splendid season from May to October, with a minimum of gales and squalls, it is little wonder that yachting has flourished on Lake Ontario for a century or more. The wonder is that comparatively few have taken advantage of the opportunity. This paper has dealt exclusively with the sailing feature of yachting—which is its backbone and breastbone. The auxiliary engine is used in many Lake Ontario

yachts, both large and small, but the best racing classes, the P's and the R's and the cutters, will have none of it. Yet it undoubtedly extends the cruising radius 100%, both in time and pleasure. I cruised from Toronto to a certain point in the midst of the Thousand Islands, and back, once, in the 28-foot yawl Blue Peter. I was hunting the wreck of a French war schooner,

Port Dalhousie, twenty-eight nautical miles across Lake Ontario from Toronto, is a favorite objective of cruising races from Toronto and Hamilton, the course being due south from the former port. Frequently yacht fleets race to Port Dalhousie on a Monday, when Dominion Day, Civic Holiday, or Labor Day gives the opportunity. This picture of the entrance to Port Dalhousie (the lighthouse is shown to the right) was taken at the start of such a return race on Labor Day.

sunk at the time of the conquest of Canada—and I found her. We were away sixteen days, and in all that time we only ran our little auxiliary engine sixteen hours; but it enabled us to sleep in port every night. The auxiliary cruiser—yawl, sloop, ketch, cutter, or schooner—is very happy on Lake Ontario. And in addition to the auxiliaries there are out-and-out power craft by the hundreds, from the runabout, which burns up the waters of the bays to cruisers like Mr. C. O. Stillman's Thalassa, or Mr.

Frank Trethewey's Semiramis, which boats make nothing of a voyage to Labrador or Florida.

There are many yacht clubs on Lake Ontario. The Royal Canadian, at Toronto, is the oldest and largest, with over 2,000 members, and a fleet of 200 craft of all sorts. The Royal Canadian,

Three years in succession Season's Champion in R. C. Y. C. First Division.—Cutter Gardenia, sailed by Fleet Captain E. K. M. Wedd. Gardenia is typical of the development of the cutter rig on Lake Ontario in its latest stages.

as already stated, was founded in 1852, and was the first yachting organization on the lakes, although many private pleasure craft had raced and cruised before it was formed. The Royal Canadian has a magnificent clubhouse on Toronto Island, with its own marine yard, railway, and building shop. It was twice a challenger for the America Cup in the days when fresh-water challenges were acceptable, and it has won and held the most impor-

tant trophies for yachts on the Great Lakes—the Canada's Cup, the Fisher Cup, the George Cup, the Lipton Trophy, and the Yacht Racing Union Trophy, or Richardson Cup, emblematic of the championship of the lakes in specified classes. Its blue ensign and its burgee with crown and beaver have been flown on the seven seas, for its members take their yachts abroad. Mr. Walter Near's three-masted schooner yacht, Kallisto, has an ocean sailing record of over 40,000 miles. Royal Canadian racing crews contend on equal terms with yachtsmen of the seaboard, both in home waters and foreign.

Toronto has also the Queen City, National, Alexandra, and Woodbine Yacht Clubs, and Toronto Canoe Club, which has a yachting section. These are smaller clubs than the pioneer Royal Canadian, and confine their efforts largely to local regattas for small craft. Hamilton has the Royal Hamilton and Victoria and the Pals. Kingston has a yacht club, and so has Belleville. This completes the Canadian list on the lake. On the American side are the Crescent, of Watertown, the Oswego, the Rochester, and the Olcott Beach, all enterprising clubs, smaller and younger than the Royal Canadian, but vigorous. The Rochester Yacht Club has twice won the Fisher Cup, and holds it and the George Cup and the Canada's Cup. The Crescent Yacht Club has been a persistent battler for the Great Lakes championship and the George Cup, and has won the latter more than once.

Gathering all these clubs together is the Lake Yacht Racing Association, which holds annual regattas, sometimes conducting cruising races from port to port, sometimes making a circuit of the lake, with races at each port visited, and sometimes making a rendezvous at Toronto, Cobourg, Hamilton, Rochester, Oswego, Henderson Harbor, Chaumont Bay, Kingston, Belleville, or Prinyer's Cove, in the Bay of Quinte, and giving a week's racing there for forty or fifty yachts. In all, yachting on Lake Ontario enrolls a noble army—or navy—of between three and four thousand sailormen, to whose ranks should be added another thousand at least, to include the canoeists and dinghymen and unattached but ardent lovers of the canvas wing.

Oriole IV, Flagship of Commodore Geo. H. Gooderham, R. C. Y. C., Toronto

EDITOR'S NOTE.—Mr. Snider has been sailing since 1891, when he made his first voyage in the schooner Albacore, on Lake Ontario. He is a member of the Royal Canadian Yacht Club and of the National Yacht Club, Toronto, and has been owner in succession of the yachts Chicago Girl, Deathtrap, Frou Frou, Blue Peter, and Gardenia, the last being a syndicate cutter. Reporting yachting events of importance on this side of the Atlantic, occurring between the America Cup Contest of 1899 and the Scandinavian Gold Cup Race of 1927, has been his occupation for years. While thus engaged he sailed twelve races in the champion fishing schooner Bluenose, holder of the International Trophy and Nova Scotia championship, and also in the American fishing schooners Henry Ford and Columbia as Canadian observer. Most of his sailing has been on the Great Lakes, with occasional diversions to Nova Scotia, Long Island Sound, Gloucester, Mass., the Caribbean Sea, the English Channel, and one long cruise from Bristol, R. I., to Toronto, by way of the Gulf of St. Lawrence. In addition to this active sailing life Mr. Snider is the author of *In the Wake of the Eighteen-Twelvers*, *The Story of the Nancy and other Eighteen-Twelvers*, *Faded Flags of Fadeless Fame*, *The Glorious Shannon's Old Blue Duster*, *Annals of the Royal Canadian Yacht Club*, *Under the Red Jack*, and many magazine articles on yachting and privateering, the latter being a subject in which he had done much original research. At the present time he is the news editor of the *Evening Telegram*, Toronto.

SAILING ON LAKE ST. LOUIS, MONTREAL, CANADA

By Alex S. Poe

LAKE ST. LOUIS is situated near Montreal, Quebec, Canada's largest city, and is one of the comparatively few yachting centres in the Dominion. The lake is formed by the junction of the St. Lawrence and Ottawa Rivers; its greater part is quite shallow and numerous shoals encroach on its area. The map in Fig. 1 shows the general location of the lake, but it is unfortunately too small to show the racing courses and that part of the lake in which most of the sailing is done. It can be seen that the St. Lawrence flows in roughly a northeasterly, and the Ottawa in a southeasterly direction and the lake itself is located on the south side of the Island of Montreal. Practically no sailing is done below Dorval, due to the fast current as the Lachine Rapids are approached, while in the St. Lawrence Channel, through which the heavy traffic to and from the Great Lakes passes, there is considerable current and little use is made of this part of the lake from Windmill Point (at the southeast tip of Île Perrot) to the eastward. A sandbar, which separates the St. Lawrence Channel from the northern part of the lake, stretches for several miles and leaves a narrow channel at Windmill Point, which is used by pleasure craft only in passing to and from the western end of the lake. Most of the sailing is done in that part bounded by the Island of Montreal and the sandbar on the north and south, and by Île Perrot and Dorval on the west and east. Of this, the area from the Pointe Claire Lighthouse up is by far the best, the water in the vicinity of Dorval being dotted with shoals and the current is quite considerable.

In the Pointe Claire area there is not much current; there are no high hills nor tall buildings and the surrounding country is flat, with the result that the winds are, for the most part, true

in direction and strength far enough away from the land to get the real breeze. North winds are always puffy, but the southwest and west winds (the prevailing winds in summer) are fine steady sailing breezes. The water is shallow, a fixed draught of 4 feet being about the maximum that can be used, and when it breezes up there is a short, steep sea that is very hard on any boat. The

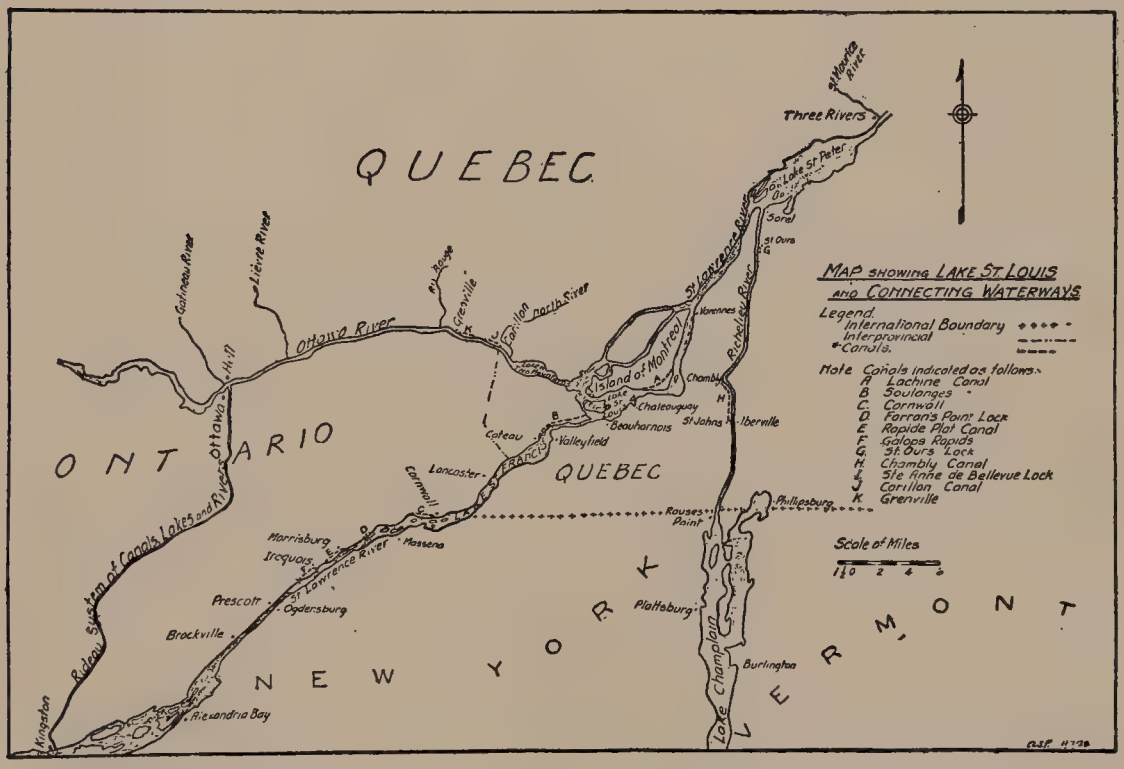


FIG. 1. MAP SHOWING LAKE ST. LOUIS, MONTREAL, CANADA
The Lake is just south of the Island of Montreal

lake is not large, but the seas can be quite wicked, compared to those of inland lakes on which the scow type of racing boat is used.

The principal racing course is a 4½-mile triangle off Pointe Claire, where the current is slight and practically constant in strength and direction; and what shoals there are can easily be avoided since they are well removed from the course and a glance at the chart will show a visiting sailor where not to go. The writer has sailed over several well-known courses and considers the Lake St. Louis course to be one of the fairest of them. The Dorval

course is used by the Royal St. Lawrence Yacht Club for club racing, but there are so many shoals that all important racing takes place over the Pointe Claire course. Three other courses are used on Lake St. Louis, these being: the Dorval to Windmill Point course, the Dorval to Soulanges long distance cruising course and the Baie d'Urfe-Beaurepaire T course. None of these are used to any extent.

For cruising Lake St. Louis offers a considerable variety, not in itself, but in the number of places which can easily be reached from it. For week-end cruising there are numerous out of the way spots on the Lake itself, and also on the Lake of Two Mountains which is entered by the lock at Ste. Anne de Bellevue at the west end of Lake St. Louis. For long week-ends Lake St. Francis offers the cruising man a fine sailing ground. It is reached by the Soulanges Canal which is about 14 miles long. For longer cruises three main routes are available; the first and most used, the St. Lawrence River and canals to Lake Ontario; second, the Ottawa River, Rideau Lakes and canal system to Kingston on the St. Lawrence; third, through the St. Lawrence and Richelieu Rivers to Lake Champlain. Auxiliary power is essential for all these cruises as there is considerable canal and fast water work to be done. A brief description of the three routes may be of interest. The St. Lawrence River trip takes the cruiser from Lake St. Louis to Kingston, where he has Lake Ontario and the whole chain of Great Lakes before him. To overcome the rapids of the St. Lawrence five canals (Soulanges, Cornwall, Farran's Point, Rapide Plat and Galops Rapids) having a total of 17 locks, 162 feet lift, and length of 37½ miles, must be passed through. A welcome relief after all this canal work is afforded by the Thousand Islands, and a two weeks' vacation can easily be spent in this delightful locality. From Dorval to Cornwall is 82 miles, to Brockville 120 miles, and Kingston 170 miles.

The Rideau trip is more suitable for power than for sail, due to the narrow waters and numerous canals. This cruise takes one up the Ottawa River to Ottawa, thence through the Rideau system of river, lakes, and canals to Kingston. The distance from Dorval to Ottawa is 108 miles; and from Ottawa to Kingston

126 miles, which includes several canals having a total of 60 locks with a lockage of 565 feet, of which 400 feet is rise and 165 feet fall.

Lake Champlain is reached by passing through the Lachine Canal and following the St. Lawrence River to Sorel, where the Richelieu River is entered and ascended until it opens into Lake Champlain. The distances on this cruise are: Dorval to Sorel 56 miles, Sorel to Lake Champlain 81 miles, and there are three canals (Lachine, St. Ours and Chambly) having a total of 15 locks, lockage 124 feet (79 feet rise and 45 feet fall) and length of 20½ miles. From Lake Champlain the Hudson River and New York may be reached.

Another trip which can be made is that from Lake St. Louis down the St. Lawrence to the Gulf or open sea if desired. From Dorval to Quebec is a distance of 171 miles, to Tadousac 286 miles, and to Halifax 1,090 miles.

Organized sailing on Lake St. Louis is in the hands of two clubs, the Royal St. Lawrence and Pointe Claire Yacht Clubs, of which the former is by far the bigger and more important. The Royal St. Lawrence Yacht Club is well known through its participation in international and interclub racing, in which branches of the sport the Pointe Claire Yacht Club does not take part. Practically all the yachts on the lake are moored in the anchorages of these two clubs, and all racing is looked after by them. The Royal St. Lawrence Yacht Club has all the A and B Class yachts on its squadron list, the Pointe Claire Yacht Club has the majority of the D and E Classes, and the dinghies are evenly divided between the two clubs. This is a good arrangement, since it eliminates all but friendly competition and each club concentrates on the development of the classes which are most suitable to its members and general conditions.

The Royal St. Lawrence Yacht Club is situated at Dorval, 9 miles from Montreal, where it has large grounds, two good-sized clubhouses, a boat-building shop and storage shed, two tennis courts and a well-protected anchorage. The racing scows, which must be kept in as quiet water as possible, are moored bow and stern to floating pontoons conveniently located in front of the main clubhouse. The Royal St. Lawrence Yacht Club has

the privilege of using the grounds and buildings of the Windmill Point Fin, Fur and Feather Club, at the southwest end of Île Perrot and which is an excellent spot for picnics and as an objective for a day's sailing.

The Royal St. Lawrence Yacht Club was founded in 1888. In 1891 the present site was bought and a clubhouse built. Three

SUZETTE

One of the improved three-rater type of the E Class, several of which were built in 1925 and 1926. There are now five of these boats in the fleet of the P. C. Y. C., three of which have cabins.

years later the club was given a royal warrant entitling its members to fly the Blue Ensign without badge defacement, a privilege accorded only one other Canadian yacht club. In 1897 the present clubhouse was built, and in 1920 the club acquired the buildings and property adjoining it on the west side, giving badly needed accommodation and beautiful grounds, in addition to future harbor space.

SAILING ON LAKE ST. LOUIS

Some years ago the Royal St. Lawrence Yacht Club organized a Sea Scout Troop, and through the generosity of several prominent members the 45-foot yawl Jellicoe was donated to the troop, which later became the owners of the two ship's boats Shackleton and James Caird. The troop has grown steadily and the boys do a great deal of cruising, a crew of boys having taken one of the ship's boats to New York and back in 1926.

The Pointe Claire Yacht Club is quite a small club, its headquarters being at Pointe Claire, which is 14 miles from Montreal and in approximately the centre of Lake St. Louis. The club is an unpretentious one, its fees are low, there is no dining room nor permanent sleeping quarters. Its aim is to give every opportunity to its members to sail and look after their boats at a minimum of expense, and to provide a place for occasional social gatherings.

The proportion of boats to members is high, and since 1924 several new boats have added much to the quality, as well as to the numbers, of the club's fleet.

The Pointe Claire Yacht Club was originally the Corinthian Sailing Club, one of the first sailing clubs on Lake St. Louis, from which grew the Pointe Claire Boating Club. For many years aquatic sports in general were active at the club, but the war changed this and from 1919 on sailing has taken the place of everything else. In 1924 the Pointe Claire Yacht Club was incorporated and since then the club buildings and facilities for sailing and social activities have been improved very much.

The Royal St. Lawrence and Pointe Claire Yacht Clubs have worked in conjunction with each other, each club has its own particular merits, and each serves the sailing men in its own particular way. As a result sailing on Lake St. Louis has benefited materially, which is evident from the way the sport has recovered from the effects of the war.

A brief history of sailing on the lake is necessary in view of the great influence the past has had on the present, particularly with regard to the type of boat that is used. The years prior to 1896, when the Seawanhaka Cup was won by the Royal St. Lawrence Yacht Club challenger Glencairn, had little, if any, effect

on present-day affairs and will not be taken up. From 1896 to 1905 the Seawanhaka Cup was held by the Royal St. Lawrence Yacht Club, and was competed for each year with the natural result that effort was concentrated on the racing boats whose development was rapid. This type of racing boat, brought out under the waterline length and sail-area rule, was used as a basis for several classes most of which were practically one-design.

NOOYA

Owned and sailed by T. H. P. Molson of the Royal St. Lawrence Yacht Club. D-class sloop of the keel-and-centre-board type built in 1925

All were light displacement, small sail-area boats, which were easy and cheap to build and keep up and which were also well suited to the conditions of water and weather found on Lake St. Louis. After the Seawanhaka Cup was taken to Manchester in 1905 there was a lack of interest and few boats were built for some years. In 1911 the B class of racing scows, which were similar to the Seawanhaka Cup boats but smaller, was started. In-

terest in sailing was stimulated by these scows but they had no influence on the design or construction of the other classes. In the years 1910-1914 a number of semi-keel and centreboard boats were built, these including three 45-and one 36-foot yawls and four small one-design sloops. The latter were designed by William Gardner for the Thousand Island Yacht Club of Alexandria Bay, N. Y., with which club the Royal St. Lawrence Yacht Club sailed a three-boat team match in 1913. The war stopped the return race in 1914 and after that date no more boats of this class were built. Up to 1925 building was confined to the B and Dinghy classes, but in that year a new development took place.

The handicap class, which had been formed in 1919 to take in all the old one-design classes, was split up into three classes, the A, D, and E, according to rating under a measurement rule adapted from the International. This rule has had little effect on building, but racing has certainly been more interesting since its adoption and four D's and five E's have been built since 1925. In 1927 the Pointe Claire Yacht Club modified the new rule somewhat to meet its particular needs, in order that its fleet of D's and E's might race together on a more equal basis. The results of that season's racing showed the changes to have been needed, and the revised rule should develop keen racing and good boats.

The Boats

The Lake St. Louis fleet is divided into the A, B, D, E, and Dinghy classes; of these the B and Dinghy classes are governed by class rules and the other three come under the measurement rule. The A-class boats rate over 21 feet, and are cabin craft with a minimum draught of 2 feet, 6 inches; the D class takes in cabin boats rating between 17 and 21 feet, and the E class is composed of the smaller boats rating up to 17 feet, with or without cabins. Under the Pointe Claire Yacht Club 1927 rules the D class is a restricted one, and the E class a one-design as regards hulls.

The B class is the racing class of the Lake and is composed of 32-foot racing scows. These boats are extreme racers, very

lightly built, having no keel or ballast, sloop rigged, and carrying 350 square feet of sail and a crew of four men. There is no limit on the height of masts, and a high, narrow Marconi is the favorite rig.

The following table gives the principal dimensions of typical boats of the A, D, and E classes; the illustrations will also serve to show the characteristics of these boats.

TABLE SHOWING PRINCIPAL DIMENSIONS OF TYPICAL LAKE ST. LOUIS YACHTS OF A, D, & E CLASSES

	A Class		*D Class*		*E Class*	
	Thorella	Nooya	Gudrun	Althea	Suzette	Remarks
Length overall	44.17′	32.0′	32.0′	34.83′	27.33′	
Length on waterline	31.25	21.5	23.5	25.83	19.0	
Beam	11.33	8.0	8.0	8.2	7.0	
Draught (without board)	4.0	2.5	1.5	1.75	0.75	
Sail-area in sq. ft.*	1207	475	400	470	304	
Freeboard " F " *	2.93	2.25	1.43	1.75	1.52	
Length " L " *	33.48	23.86	25.83	28.78	21.64	
Displacement (Lbs.) *	22600	5430	3700	4630	2300	
Ratio $\sqrt{S}/\sqrt[3]{D}$ S = Sail-Area D = Displ. in Cu. Ft.	4.90	4.83	5.20	5.10	5.22	
Centreboard, c. b. & keel or bilge bd.	c. b. & keel	c. b. & keel	c. b. & shoe	c. b. & shoe	b. b.	
Auxiliary power	Yes	Yes	No	Yes	No	

Note: * denotes measurements taken for rating.

In the A class all the existing boats are yawls (two boats will be added to the class in 1928, one a ketch, the other a schooner) and two have a full topsail rig on the mainmast. The topmasts can be lowered so as to permit passing under the bridges at Ste. Anne de Bellevue which have a clearance of about 37 feet at high water. The A's are all fairly full-bodied boats, their hulls are well proportioned, and displacement is equivalent to that required by the International and Universal Rules for boats of their L. W. L. They are strongly built; the 45-footers (which are the only ones that race) have berths for four in the main cabin, and room for a paid hand in the foc'sle. All have centreboards dropping through

THORELLA IV

Owned by Hon. Commodore W. C. Finley of the Royal St. Lawrence Yacht Club.
Typical A-class Yawl

the keel; most of the ballast is outside; auxiliary power (which is essential if extended cruising is to be done, and these boats cruise a lot) is installed under a bridge deck. The big yawls have a good turn of speed, and Thorella IV has won the yawl championship of Lake Ontario on several occasions.

The D and E classes take in the old four- and three-rater classes developed in the Seawanhaka Cup days and boats of this type form the backbone of both the D and E classes. The D class has two boats, Nooya and Kiltie, built in 1925, of a type somewhat similar to the big yawls on a smaller scale. Both are sloop-rigged with a high, gaff mainsail, have fair-sized cabins, auxiliary power, and have done considerable cruising. The other two D-class boats given in the table, Gudrun and Althea, are very much alike in type but quite different from the Nooya type. Both are light in displacement, have small sail-areas with a low gaff mainsail, centreboards dropping through a small keel and iron shoe and no inside ballast. They have flat floors with an easy bilge, rather long, full ends and lots of deck space. Gudrun was the first boat of the four raters to be built from designs by G. H. Duggan and was launched in 1901. Althea came out in 1926 and was designed by her owner, A. F. Robertson. Althea is a bigger boat than Gudrun (and the other old four-raters); her construction is much stronger and better; cabin accommodation, deck, and cockpit space are greater, and she has auxiliary power. In speed there is not a great deal of difference between Althea and Gudrun; incidentally the latter has a remarkable racing record—from 1914 to 1927 she started in forty-nine races, taking twenty-eight firsts, 10 seconds, and 6 thirds, and in 1926 and 1927 she won the Pointe Claire Yacht Club championship in the face of keen competition and several new boats. It is a notable fact that when Mr. Robertson came to build his new boat in 1926, he decided on a type originated twenty-five years before as being the best suited to his needs, for use on Lake St. Louis and for short cruises. Six of the old four-raters were built, all off the same moulds but with different cabins, freeboard, and layout; five of the six were in commission in 1927, the sixth having been sold off the lake.

In the E class the old three-rater type predominates, though there are two or three boats of the Thousand Island Class (narrow, long-ended boats with a small centreboard, a lead keel and a rig similar to the original gaff rig of the Stars) still in use which rate into the E class. The three-raters have many of the characteristics of the bigger fours, but are harder bilged and relatively more powerful. Some have bilgeboards housing under the deck, a convenient arrangement which leaves both deck and cockpit unobstructed; some have centreboards; some are half decked and some have small cabins. In 1925 and 1926 five boats of this type were built, using the lines of the original threes, but with more freeboard, much stronger construction and a high-peaked gaff mainsail. Of the five boats three now have cabins, and one of the old centreboarders has had a cabin added. These cabins are small, but provide dry stowage, as well as shelter and sleeping space for two men, while there is sufficient room forward for the third man of the crew due to the full ends and hard bilges which are carried well out into the ends. It is rather an unusual combination, bilgeboards and a cabin on a 27-footer of this type, but the up-to-date three-raters have proved their worth in racing, cruising, and knockabout sailing. The rudders of these boats are removable so that they will float in 9 inches of water, and consequently shoal water has no difficulties for them. This class has developed considerably in the last few years, and the success of the cabin boats will probably make the class still more popular in the future.

The Dinghies are fine, able little ships which are built to the rules of the Lake Ontario Skiff Sailing Association. Aykroyd Bros. of Toronto have built all the Lake St. Louis boats, their standard type being used. These boats are 14 feet long, carry 140 square feet of sail and a crew of two. They are nicely built and finished, are fast and carry their sail well and have proved fine little craft for training youthful sailors. The 14-foot Dinghy is very popular on Lake Ontario where there are fleets at Toronto, Kingston, Belleville, Rochester, Watertown, and other places. Interclub contests in these boats are frequent and each year two crews from the Royal St. Lawrence Yacht Club meet crews

from Toronto and Kingston, the races being held alternately on the home waters of the three clubs.

From the above it can be seen that the majority of the boats are of light displacement and small sail-area. With the exception of half a dozen yawls all are sloop-rigged; centreboards or bilgeboards are necessary, auxiliary power is installed on a big proportion of the boats, and outboards are becoming quite popular, particularly in the E class. Rigs are low, comparatively, due to the height limit on the bridges at Ste. Anne, and a doubt as to the workability of the high sail-plan on boats which depend considerably on their crews for stability and do much sailing with small and inexperienced crews.

ALTHEA

Owned, designed and sailed by A. F. Robertson of the Royal St. Lawrence and Pointe Claire Yacht Clubs. One of the newest D-class boats.

One very interesting feature of Lake St. Louis sailing is the absence of the professional element in any form. Paid hands are practically unknown; amateur designers such as G. H. Duggan and F. P. Shearwood, who have made their names known in international racing, have designed all but three or four of the boats on the Lake, including those of the B class; and the majority of the fleet were built at Dorval under the supervision of their amateur designers. This has resulted in the development of a fine spirit among the sailing men; the officers of both yacht clubs are boat owners and experienced sailors and the truly amateur spirit of sailing for the love of the sport is paramount.

SAILING ON LAKE ST. LOUIS

EDITOR'S NOTE.—Mr. Poe's yachting experience in small boats is a very extensive one, although confined entirely to inland waters, which, of course, should not be considered to have lessened in value his sailing life.

As a member of the Royal St. Lawrence, the Pointe Claire Yacht Clubs and the North American Yacht Racing Union, he has served on racing and regatta committees, and in that way advanced the interest of sailing and yachtsmen.

As a skipper, or member of crews in dinghies, class B, D, and E scows, he entered and sailed in all important local and interclub races covering the past fifteen years.

In addition to racing, Mr. Poe is interested in cruising, and has visited the many bodies of water the Great Lakes offer for sailors.

"TAFT CUP CATBOATS"

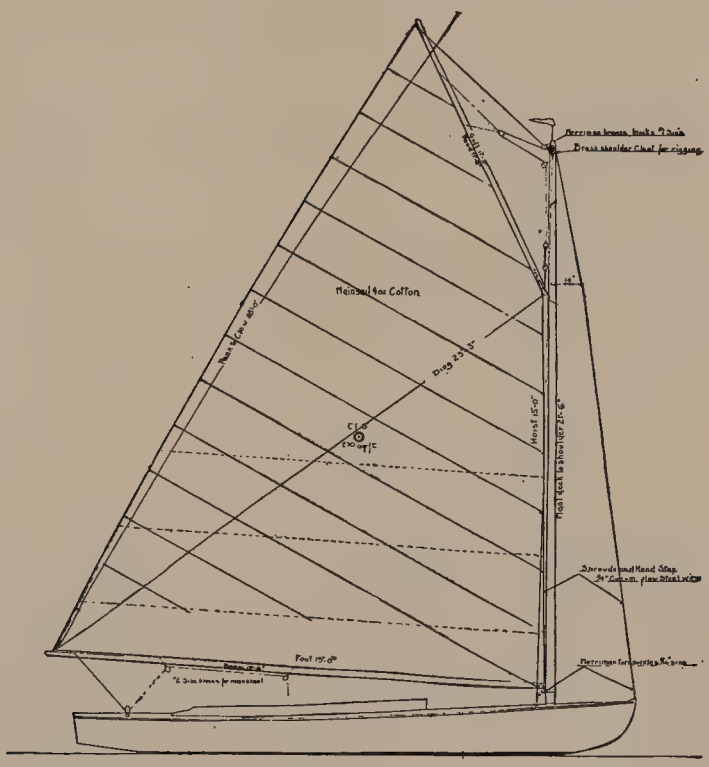
By F. G. Luderer

FORMER President Taft some years ago, in giving a beautiful cup to the Toledo Yacht Club as a prize for catboats, brought additional attention to this popular type of boat, which is today one of the most thoroughly tried out types of sailboat on the Great Lakes. Its history dates back many years previous to the presentation of the Taft Cup, in 1908.

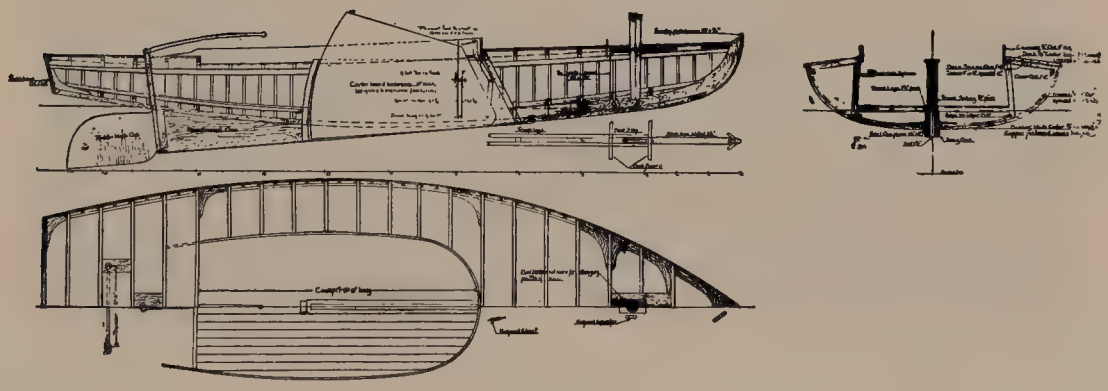
Many of the early successful boats were designed by Charles Mower, although developed to a point of greater efficiency in the last three or four years by R. A. and A. W. Luedtke of Toledo, Ohio.

This type is a restricted 22-foot catboat with beam of 8 feet and drawing about 18 inches of water and carrying 270 square feet of sail. The construction consists of a solid oak keel with ribs spaced about 6 inches apart, and with provision made for the centreboard to drop down through the keel, which gives this type of boat additional windward ability when sailing on the wind.

These boats have generous freeboard and a nicely rounded bilge, which, with the ample beam of the boat, makes them very good seaboats in every respect. The deck forward is about one-third the total overall length, and makes a fine protection in case of heavy sea. The latest model now has a small cubby cabin giving room for the occupants to sit comfortably, and just allowing bare headroom for a person in that position. The cabins

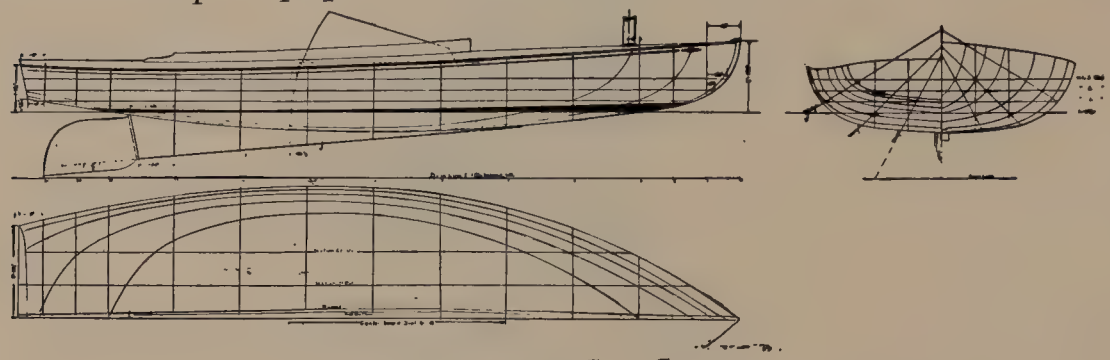


SAIL PLAN TAFT CUP CAT CLASS—YACHT OLD SAM—ONE OF DETROIT'S FASTEST BOATS
Designed by Charles D. Mower



ARRANGEMENT PLAN—TAFT CUP CATS
Designed by Charles D. Mower

are open at the after end, and completely house the centreboard and the simple equipment that raises and lowers it.



LINES—TAFT CUP CATS
Designed by Charles D. Mower

TAFT CUP CATBOATS ARE VERY ABLE TWO-MAN BOATS

Taft Cup catboats are built of California redwood, which takes a very beautiful natural finish. The combing, centreboard box, and transom are built of mahogany; the tiller of walnut.

For many years they carried a wooden centreboard and were gaff-rigged, but in the last two or three summers the Marconi sail has been used effectively in an effort to gain speed and efficiency. The spars have been continually increased in height by the Luedtke

TAFT CUP CATBOAT—MARCONI SAIL

Bros., builders, permitting a higher Marconi sail to be used to increase the driving power of the sail at the spar, thereby shortening the boom and bringing the sail completely in board. This rig is now one of the fastest that a 22-foot catboat has ever known. Besides, reefing has been simplified. It is not impossible for these boats

to reach a speed of approximately 7 miles an hour in a fair breeze, and under most favorable circumstances they have been known to make at least 10 miles per hour for a limited length of time.

Although it should be remembered that this is essentially a

TAFT CUP CATBOAT—GAFF SAIL

fresh-water boat, because of its shallow draught, an additional 2 feet of keel would make it an ideal boat for salt water.

Many clubs on Lake Erie, Lake St. Clair, and the Detroit River have featured these boats for years as a club-owned class; and consequently there has not been the development nor the ef-

ficiency in handling this type of boat, because naturally skippers were continually changing boats, and did not take such intense interest in any one boat.

Under the combined efforts of Robert Oakman and the writer,

TAFT CUP CATBOAT, HELEN II
Represents a type very popular at Detroit

of the Detroit Yacht Club, the 22-foot restricted catboats now number twenty-four owners in the Detroit Yacht Club. The fleet is a very beautiful and fast one, and is continually growing.

The upkeep of this class is light—probably $10.00 per year

for paint, varnish, steel wire, and brushes. Carefully taken care of, a Marconi sail in a racing boat should last for two seasons.

The Taft Cup Catboat is wonderfully fast in light and medium breezes. In heavy weather, the newest keel and cubby cabin cat is remarkably seaworthy and fast. In a recent race, 1926, in a strong wind of 33–35 miles, in the Richardson Cup races at the Toledo Yacht Club, Toledo, Ohio, they went through the heavy seas in able fashion. The skippers jibed around the course marks successfully. Outside of shipping some water (unavoidable), no damage was encountered by any of these craft in this severe test.

It has been found necessary with the new high Marconi sails and spars to carry 100 to 150 pounds in side lead ballast. In the latest design, no inside ballast is needed.

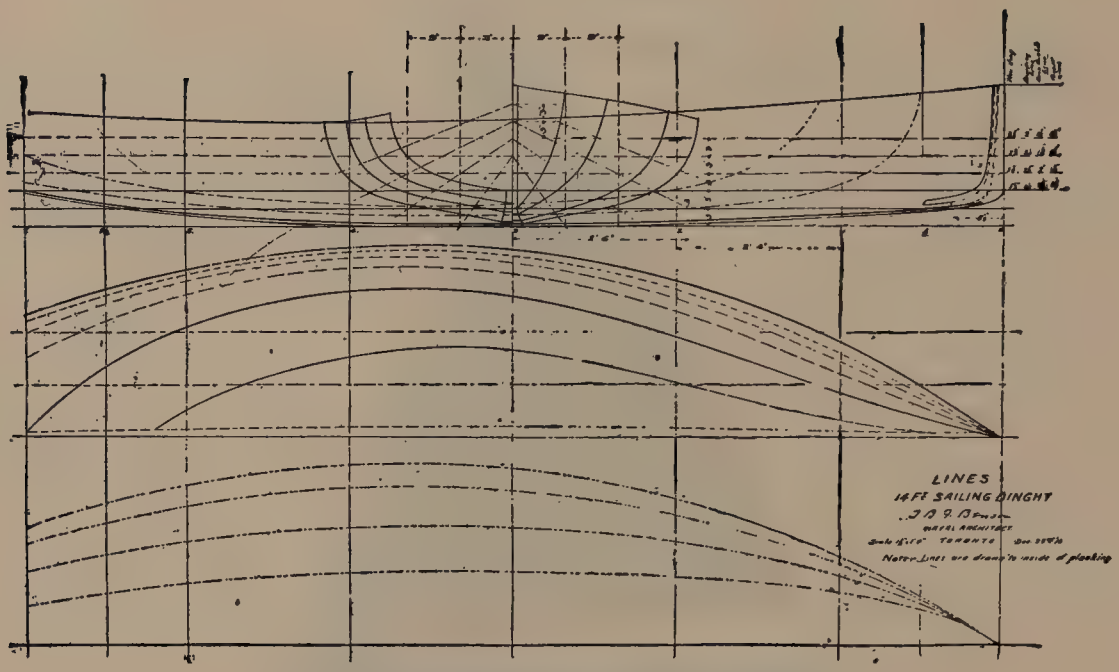
CANADIAN DINGHIES

By T. B. F. Benson

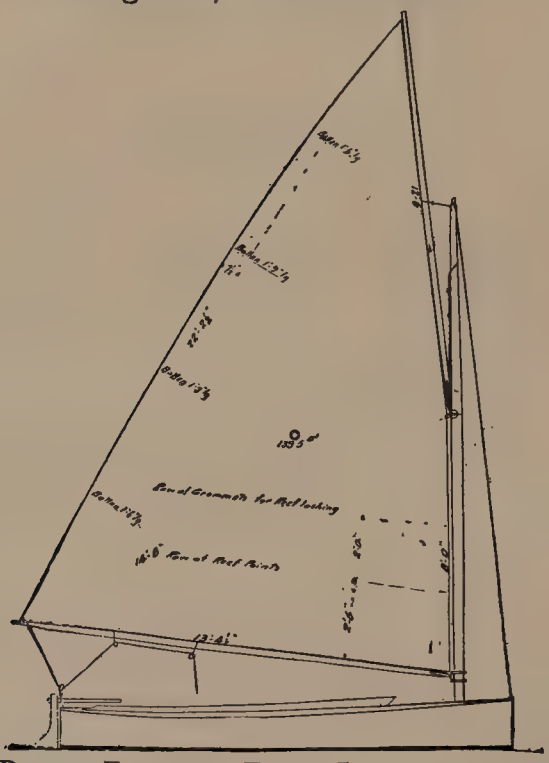
(Reprinted from Chicago Yacht Club Year Book by Special Permission of the Club and Mr. Benson)

THESE little boats have probably developed more sailors than any other class of sailboats, with the result that today nearly every one of the Canadian yacht racing skippers has developed from the dinghy class.

Canadian yachtsmen, and in fact sailors everywhere, owe a great debt of gratitude to the late Mr. J. Wilton Morse, of Toronto, who was the originator of the sailing dinghy. About the year 1897 Mr. Morse conceived the idea that a short, beamy boat, something similar to a yacht's dinghy, fitted with a moderate sail, would make a splendid little craft for young boys to learn to sail in. He prepared a set of plans, which called for a square sterned boat, without any deck, 12 feet long by 5 feet beam, of large, full midship section, and a sail-area of about 75 square feet. He had the boat built at a cost of about $85.00. She immediately



LINES—FOURTEEN-FOOT CANADIAN DINGHY
Designed by T. B. F. Benson



SAIL PLAN—FOURTEEN-FOOT CANADIAN DINGHY
Designed by T. B. F. Benson

attracted attention, with the result that the next year saw many of the small boys, whose parents had summer homes on Toronto Island, sailing these little craft about Toronto Bay, and having the time of their young lives, racing one another around the yachts moored off the Royal Canadian Yacht Club.

The popularity of the sailing dinghy was thus quickly established. The Lake Sailing Skiff Association, which since the early '90's has governed small boat sailing at the western end of Lake

Photo by Bruff Garrett

CANADIAN DINGHIES

Ontario, adopted it as a regular class, formulated rules, which restricted overall length, minimum and maximum beam, minimum area of largest cross section, maximum sail-area and scantlings, to govern their construction. Practically all the existing yacht and sailing skiff clubs started to hold races for the dinghies and some new Dinghy Clubs were started.

Within a year or two of the advent of the 12-foot Dinghy, Mr. Morse designed a 14-foot dinghy, which being a more wholesome and faster boat than the 12-footer quickly superseded the 12-footer and is still the most popular class. Some years later

the yachtsmen at Hamilton introduced a one-design class of 16-foot Dinghies, which was later changed to a restricted class, but these boats, though very popular at Hamilton, have never attained the popularity and fame of the 14-footer elsewhere.

The Lake Sailing Skiff Association at the outset drew up restrictions to govern both the 14-foot and 16-foot Dinghy Classes. So successful have these restrictions been that, with the exception of a few minor changes, they still govern both these classes and are as follows:

Fourteen-Foot Dinghy Class

Length overall, 14 feet maximum.
Beam, maximum, 5 feet, 7½ inches. Minimum, 5 feet.
Depth, minimum, 16 inches.
Area of largest vertical cross section, 875 square inches.
Sail-area, maximum, 140 square feet.
Planking, minimum, ⅜ inch thick.
Ribs, minimum, 1 x ¾ inch, spaced 12 inch centres or its equivalent.
Rubbing streak, minimum, ¾ x ⅜; maximum, ¾ x 1 inch.
Dinghies to be clinker built, to show lands of not less than one-half the thickness of the planking.
The minimum width of decking to be not less than 8 inches in decked boats, but if built without decking, then 3 inches must be added to the depth and 180 square inches to the area of the largest vertical cross section.
Crew, two men must be carried.

Sixteen-Foot Dinghy Class

Length overall, 16 feet.
Minimum beam, 5 feet, 6 inches.
Maximum beam, 7 feet.
Minimum freeboard, 12 inches.
Planking minimum, ⅜ inch.
Ribs, minimum, 1 inch by 1 inch, spaced 12 inches centres or its equivalent.
Sail-area, maximum, 190 square feet.
Boats may be sloop rigged, i. e., jib and mainsail. If sloop rig, mainsail not to exceed 80 per cent. of sail-area, jib to be measured actual area.
Centreboard maximum, 100 lbs. metal.
Crew, three men may be carried.

Boats may be either carvel or clinker built. If clinker built, to show lands not less than one-half the thickness of the planking.

A square or snub nose boat shall not be allowed, as defined on the restrictions of the 20-foot sloop class. No spinnaker allowed.

The 14-foot dinghy being the most popular class has shown the greatest development. The early boats were quite tubby, with very full bilges carried well forward and aft, and full deck line forward. In the desire for speed the bilges have been slacked off, the flat bottom has given way to one with considerable dead rise, and the lines forward and aft have been fined down so that in some of the later boats we find considerable hollow in the forward waterlines. In this development for speed, stability has been considerably sacrificed, but the up-to-date dinghy is a better school ship for young sailors, and in the hands of a skillful skipper and crew, will carry its full sail in a breeze of about 15 knots, though the writer has frequently seen them racing under full sail in a stiffer breeze; and they certainly did travel.

Photo by Bruff Garrett

CANADIAN DINGHY

The racing in the 14-foot dinghy class has become so popular about Toronto that now in nearly all clubs the class has been divided into three grades,—A, B, and C, and the Lake Sailing Skiff Association grades the dinghy skipper under the following regulation:

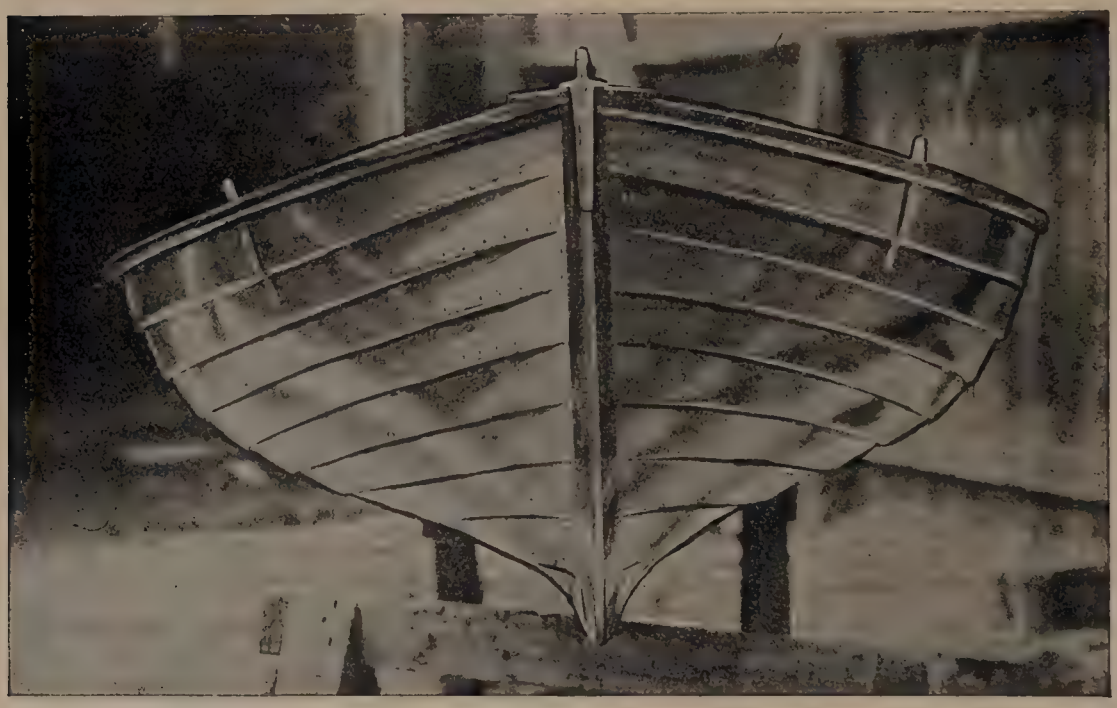
CLASSIFICATION OF SKIPPERS

In all races for 14-foot dinghies held under the auspices of the Association, open to all clubs, the skippers shall be classified as follows:—

Senior Class: Those skippers who have won 2 or more "A" Class races.

"*A*" *Class:* Those skippers who have won 2 "B" Class races.
"*B*" *Class:* All other skippers.

No skipper shall sail in any lower class than that in which he is assigned as above except as crew and provided he does not handle the tiller.



One of the latest fourteen-foot dinghies, designed by George Corneil for Mr. Stein of the Parkdale Canoe Club, 1926. Its particular characteristics, shown in different views, are its sharpness forward, its quick dead rise, and the easing off of the quarters. It shows the general tendency towards the flatiron deckplan, sharp forward, and wide aft.

The cost of sailing dinghies like most other things has increased greatly during the past years. In the early days a 14-foot dinghy

could be purchased complete with spars, rigging and sail for $125, and a boy might easily win in prize money more than his boat's cost in a season. Today a 14-foot dinghy is really the better boat; but for exposed waters, where a considerable sea is liable to make up, the 16-footer on account of its greater size is the more seaworthy.

EDITOR'S NOTE.—Canada's leading sailor, and especially in the Dinghy class, is popularly known as Tom Turrall, to whom I am indebted for these facts about this, the most popular of boats in Canada.

The following list of clubs, and of boats owned by the members of each club, attest to the interest prevailing in the 14-foot Dinghy class.

Royal St. Lawrence Club	Montreal	25 boats
Palo Club	Hamilton	5 "
Royal Hamilton Yacht Club	Hamilton	7 "
Royal Canadian Yacht Club	Toronto	75 "
Toronto Canoe Club	Toronto	30 "
National Yacht Club	Toronto	20 "
Queen City Yacht Club	Toronto	20 "
Parkdale Canoe Club	Toronto	15 "
Rochester Yacht Club	Rochester	6 "
Alcat Yacht Club	Alcat	8 "

The boats are lightly built, gentle on the helm, easy to sail providing the helmsman has had experience, tricky at times, and under all conditions giving the maximum amount of pleasure and thrill. Needing but little water to float them and not a great amount of money to purchase them, it is not surprising the boats have been in constant use for years.

The pleasure of sailing dinghies is as great for boys and girls in their teens as it is for middle-aged-men. They constitute the best known of "Father and Son" class of boats.

Despite their small size and lightness of construction, these tiny boats brave the great expanse of the waters of Lake Ontario. This great inland sea when aroused stages conditions, the conquering of which speaks well for the types of boats in use and it

CANADIAN DINGHIES

Dinghy sailors on Toronto Bay were quick to adopt the towering Marconi rig; the first was Will G. Reilly, of the Queen City Yacht Club and Toronto Canoe Club, who sprung a twenty-one-foot mast for a twelve-footer as early as 1921. The picture shows her stripped and in action.

is a well-known fact that the 14-foot dinghy possesses seaworthy qualities enough to sail and carry on when conditions are bad enough to embarrass skippers of large craft. The sailing qualities are all the more remarkable when it is known that these little boats are only 14 feet long and 5 feet wide.

Of the Regattas, four are club regattas, and in addition three days of racing are held during the Canadian National Exhibition. Two boats from each club enter championship races sailed in September yearly.

International races take place during the sailing season between the United States and Canada. The Douglas Cup is raced for each year by one boat from each country. The Emerson Cup is raced for by teams composed of two boats from each country. The Douglas Cup was donated by M. James Douglas of Toronto in 1918.

The Emerson Cup was donated by E. J. Emerson of Lockport, New York.

Mr. Turrall has for many years owned and sailed one of the 14-foot dinghies, and states it is a pleasure to testify in this manner to the worth of this class of boats, and further that no owner of boats or a lover of the great sport of sailing should be without a dinghy.

LAKE ST. LOUIS (CANADA) YACHTS

By G. H. Duggan

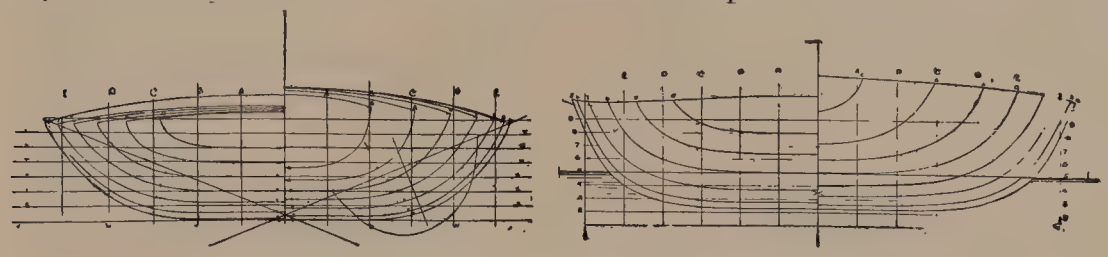
WE who have been interested in small yacht racing are much indebted to Mr. Schoettle for his effort to promote the cause of small yachts, and I gladly accepted his invitation to contribute an article on Lake St. Louis.

Lake St. Louis is a considerable expanse of the St. Lawrence River at the confluence of the Ottawa River above Montreal. Although fairly deep in general, it has numerous shoals which prevent the use of anything but comparatively shallow draught boats. The yachts used thereon are of the same type as those in use on similar bodies of shallow water and are not peculiar to it. But the present type of shallow draught racer was developed during the years the races for the Seawanhaka Cup were held on Lake St. Louis, and it may be interesting to sketch this development through a brief account of the Seawanhaka races.

For the purpose of promoting interest in small yachts, the Seawanhaka Corinthian Yacht Club donated an International Challenge Cup for yachts of from 15 feet to 25 feet corrected length under its then rule of measurement, L. W. L. plus the square root of the sail-area divided by two. The first match for the cup was sailed in 1895, when the Minima Yacht Club of England challenged, naming as its representative the half-rater Spruce IV, owned by J. Arthur Brand—the measurements of a half-rater under the English rule of that day closely corresponding with those of the 15-foot class of the Seawanhaka rule.

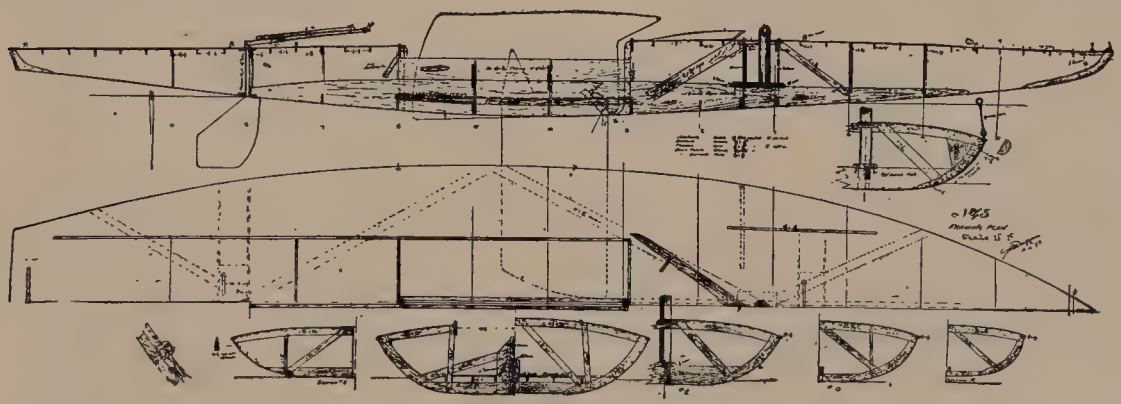
The Seawanhaka Club selected Ethelwyn, designed by W. P. Stephens, as its defender. She was of the unballasted type and easily defeated several bulb finboats in the trial races.

Both boats had been designed, following the practice of the day, with waterlines not less than the square root of the sail-



LINES OF MR. DUGGAN'S SCOW, GLENCAIRN II

area, which allowed Ethelwyn only 225 square feet of sail and Spruce IV still less, about 200 square feet. It is interesting to note that Ethelwyn was rigged with a triangular mainsail, a form that was discarded for a long time but has now (in Marconi rigs) become general, although at present having a greater ratio



GLENCAIRN—CONSTRUCTION PLAN

When Mr. Duggan designed the Glencairn he won the International Cup that was held in Canada for so many years

of hoist to boom, whereas Spruce IV had a sliding gunter, practically a jib-headed mainsail.

The cup was retained by the Seawanhaka Club, which club then accepted the challenge of the Royal St. Lawrence Yacht Club, nominating the 15-foot class for the 1896 series. The Royal

St. Lawrence Yacht Club built eighteen boats, and it was said that over thirty boats were specially built in the United States, many of which were from the boards of leading designers.

The 1895 races seemed to have eliminated the ballasted boat in this class and the cup races found the representative of each side designed on a new principle, called at the time "single bilge design," which was applied to all future contestants in the cup races until 1910, the last race sailed under the Length and Sail Area Rule.

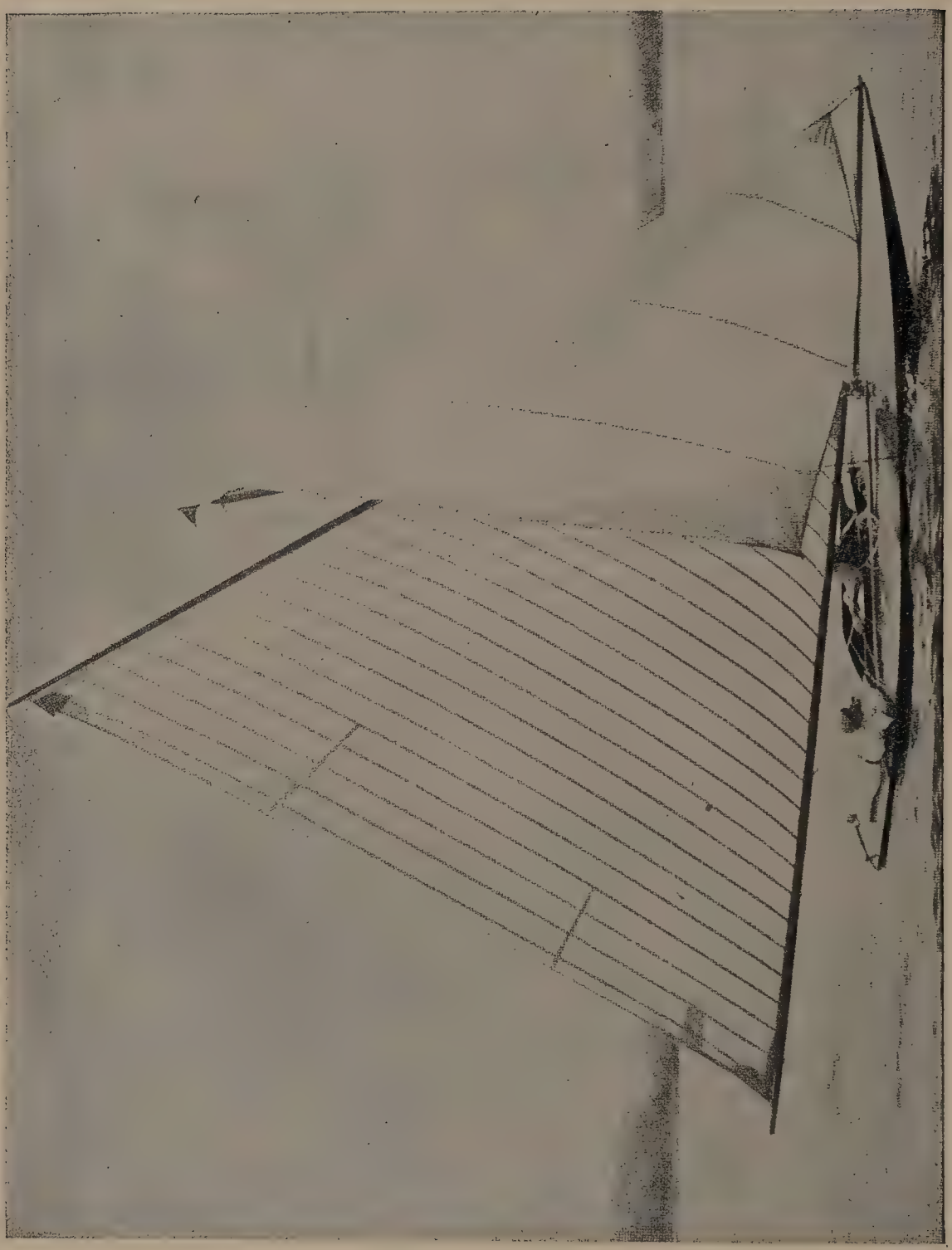
In studying the designs in the inclined position in which the boats must generally sail, it became apparent that by making flat floors carried to the ends of the waterlines, or a modified scow, many advantages were to be gained. While the design in the upright position seemed most unfavorable for speed, due to its having practically a maximum surface for displacement, when inclined the flat section became the canoe-like form with greatly reduced waterline beam, the waterline became elongated both forward and aft giving a sailing length considerably greater than the measured waterline, a symmetrical waterline plane and altogether very easy lines. It had another advantage in shifting the inclined centre of buoyancy further to leeward, thus giving a greater righting moment to the weight of the hull and crew and permitting a larger sail plan to be carried than in the Ethelwyn type, without increasing the beam. On Lake St. Louis the new principle, which seemed a radical departure, was first tried with only a moderate shortening of the waterline and increase in sail; but it seemed so promising that Glencairn I was built to what then seemed extreme limits, the dimensions being 12-foot, 3-inch waterline, 24-foot overall and a sail-area of 300 square feet. The El Hierie, designed by Clinton H. Crane, was chosen as defender. She and Glencairn were of practically the same form but El Hierie had only 240 square feet of sail (gaff-rigged) with somewhat less stability. Glencairn won easily, due no doubt to her additional power and sail-area, which was gunter rig, giving a jib-headed mainsail.

The Seawanhaka Club challenged in the 20-foot class for the succeeding year, 1897. It was mutually agreed that the sail-

C. E. Bolles. Photo taken 1896

YACHT GLENCAIRN

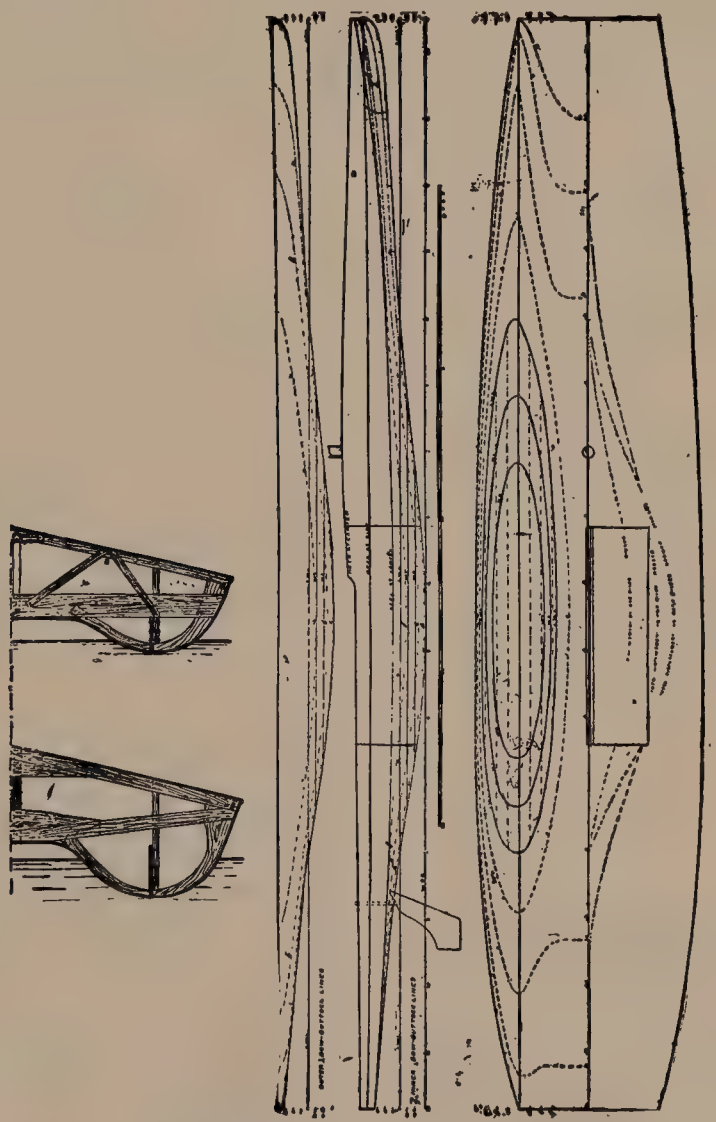
Mr. Duggan's challenger that defeated El Hierie



Copyright, C. E. Bolles. Photo taken 1896

YACHT EL HIERIE—Defeated American defender

area should be limited to 500 square feet, thus practically limiting the waterline to 17 feet, 6 inches, as no designers, in the light of the 1896 experience, would be likely to give up sail for the sake of longer waterline.



Photographs from Forest and Stream, 1898

INTERESTING DRAWINGS OF MR. DUGGAN'S BOAT DOMINION

In the 1897 series the Royal St. Lawrence Yacht Club's Glencairn II had more power than Momo of the Seawanhaka Club and, finding weather to her liking, retained the cup.

The Seawanhaka Club again challenged in the 20-foot class

for the 1898 match. The Royal St. Lawrence Yacht Club built four trial boats for this match; three of the Glencairn II type, with small variations in power and surface, to determine which was best fitted to meet average weather conditions. The fourth boat built, Dominion, was chosen to defend the cup.

The story of Dominion's development is told in the preliminary studies illustrated in this paper. It was simply carrying to a logical conclusion the principles demonstrated in the two previous years, namely, that success was to be sought by designing a boat to sail in the inclined position, paying heed to the vertical position only as regards measurement.

As the design shows, the centre of the floor was raised to reduce frictional surface when inclined and eventually was brought

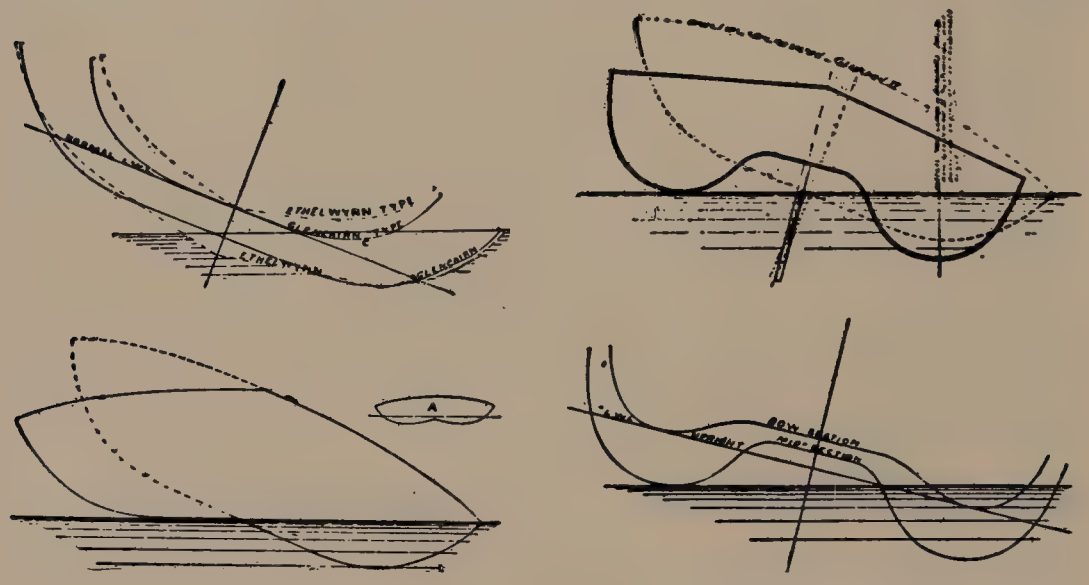


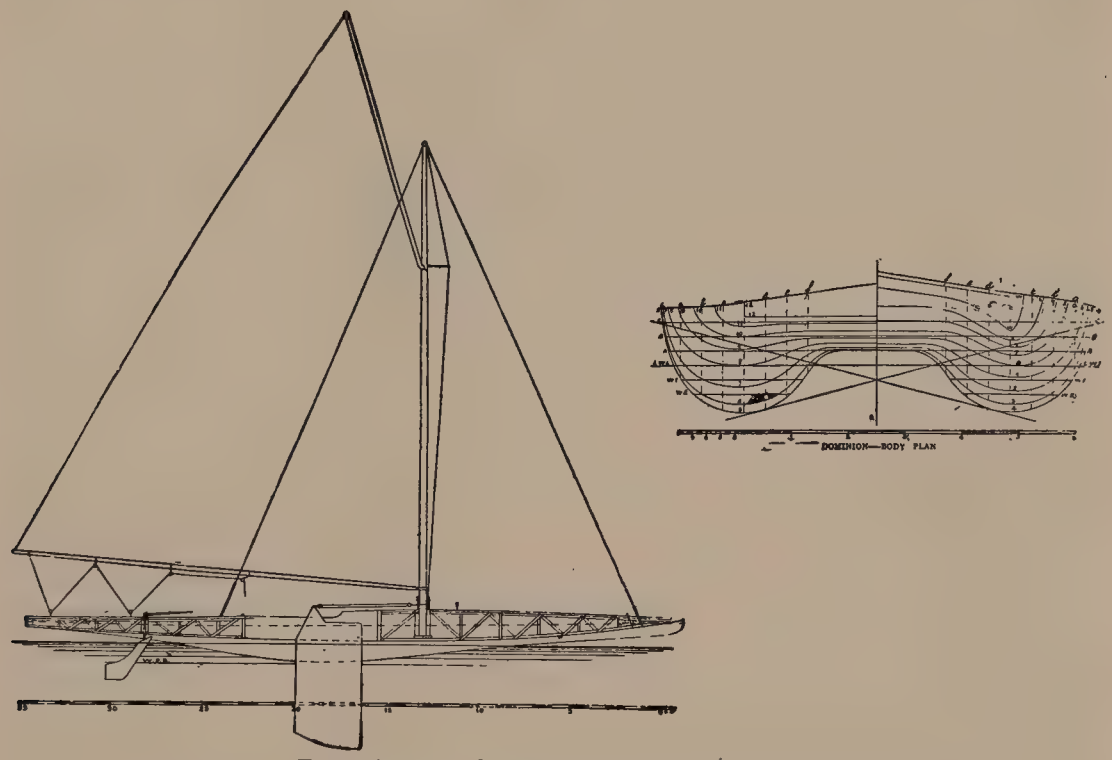
Photo from Forest and Stream

DOMINION—MR. DUGGAN'S REAL FREAK SCOW, THAT WAS SO SPEEDY SHE WAS RULED AGAINST

above the waterline, making a sort of tunnel through the middle, the top of which was about 2½ inches above the waterline at the centre of the length and which curved up towards each end to give an easy entrance and run to the central out of water portion. Each bilge was made semicircular from a centre at about the L. W. L. when vertical. When the boat took sufficient inclination

to raise the weather bilge out of the water, she was sailing on a semicircular bottom to which all the displacement had been transferred, so that her waterline, which for measurement was 17 feet, 6 inches, was in the sailing position about 27 feet long.

Dominion won the 1898 series. The extreme features of her design, however, raised a great controversy but it was finally



From Forest and Stream, 1898

SAIL PLAN AND LINES OF MR. DUGGAN'S YACHT, DOMINION

decided that she was a legitimate product of the Rules. The Seawanhaka Club again challenged for the season of 1899, the arrangement being to frame rules which would exclude boats of the Dominion type, as it was recognized that the type, while fast, might easily lead to excesses which would make very undesirable boats for general use. It resulted that the 1899 races were sailed with craft of practically the same type that had been developed in 1897; Constance representing the Seawanhaka Club and Glencairn III the St. Lawrence. These boats were very

evenly matched, the Constance winning the first two races, with the Canadian defender winning the others and the series.

Another rather important race was sailed in 1899. The sailors of the Minnesota Lakes had developed a large class of boats similar to the Seawanhaka racers. During the controversy over Dominion the White Bear Yacht Club challenged St. Lawrence to a special match between Yankee, their representative, and Dominion to be sailed on Lake St. Louis. Yankee was an out-and-out scow and her defeat demonstrated that the Dominion type outclassed all others developed under the Rules.

The White Bear Yacht Club challenged for the 1900 match and it was agreed that the match would be in the 25-foot class, still retaining the 500-foot sail-area limit. Proper scantling regulations were established, the value of which is proved by the fact that some of the boats built in 1900 are still in service. The changed conditions allowed a waterline of 27 feet, 6 inches, which was sufficient with the light displacement of these boats to give a fair form, the result being that the boats, from this time on, were of a more desirable type.

It may be well to review the experience with the type as now developed. With the boats at a proper sailing angle, the ratio of midship section to effective waterline was so small that wave-making did not seem a serious factor, even at high speeds. At all events, divergent bow waves were not noticeable and the wave of displacement was very small compared to what one had been used to in the ballasted type with limited waterlines. Surface friction, therefore, seemed to be the largest retarding force, and effort was generally directed to getting a small surface or, at least, one of small transverse width. All of these boats with the flat floors were comparatively slow when not well inclined, probably due principally to the large area and poor form of the wetted surface and, in some measure, to wave-making by the short and steeper area curve. The hard bilge boat, with bilges closely approximating a sector of a circle, gave the smallest wetted surface and the best form when in the inclined position, but when sufficient inclination could not be obtained from the wind pressure, the crew to leeward, being little outside the centre of

Photograph from Rudder, 1899

Scow, Glencairn III

This was a fast boat, and, with it, Mr. Duggan succeeded in holding the cup by defeating the Constance

buoyancy, could not heel her sufficiently to develop her best performance and some flare was generally given to the sides.

The increase in permitted waterline suggested that the Ethelwyn type might be successful, and, still further, that moderate weather speed might be found in a more circular section with a light bulb to give the stability lost by softening the bilges. Lake St. Louis built four boats known by their colors; two were of the Glencairn type but with the full permitted waterline, one of which, the Black, had hard bilges and great power, the other, the Red Coat, with a flat floor but easy bilges and flaring sides. The third boat, the Green, was similar to Ethelwyn, but enlarged with a saucer section, large beam and V-bow sections. The fourth, the White, had a short flat in her midship section with an easy circular curve to her bilges running into a V section to the bow. She had much less stability than the others and was tried both with centreboard and a light bulb fin. The boats Green and White were fast under certain conditions, but Red Coat was the best all-round performer. White Bear sent Minnesota, of the same Glencairn type but with less beam and less freeboard, and consequently less power, which militated against her in the weather that prevailed.

The Island Sailing Club, of Cowes, challenged for the 1901 match and selected Lorne C. Currie's Greyfriar, which was a beautifully built scow with a perfectly flat floor, hard bilges and flaring sides: She was, however, no match for the boats developed in America and was easily defeated by Senneville, practically a duplicate of the previous year's defender. This year in the trial races Lake St. Louis again tested a narrow hard-bilge boat with a bulb fin; but none of the bulb fin experiments were very promising, because, while fast under certain conditions, the new model did not give the same consistent performance as the old centreboard type did.

The next year, 1902, witnessed the only important development since the early races. The Bridgeport Yacht Club challenged and sent Tecumseh, a western-built scow, as its representative. The Royal St. Lawrence selected Trident.

Trident was so named because she originally came out with

a box for a centreboard and a box in each bilge inclined something over 19 degrees to the vertical. Experiments with Dominion demonstrated that with a centreboard of 20% less width than Glencairn her lateral plane was more effective, due no doubt to her small angle of heel. Early consideration was given to the introduction of bilge boards, the lee one of which would be practically vertical when sailing, but owing to the discussion over Dominion, it was not thought well to introduce them and it was not until 1902 that they were tried. Trident was built with three boxes, not, as some suppose, because there was any doubt of the efficiency of the lee boards, but in case the use of bilge boards should be disputed as not being within the spirit of the rules.

Double rudders were a corollary to bilge boards; and the next year the defender, Thorella II, was fitted with bilge boards and two rudders. Since then all contestants have had double boards and rudders. After this year there was no change in the type of boats sailed on Lake St. Louis. The cup was lost to the Manchester Yacht Club in 1905, after which there was no building in the 25-foot class on Lake St. Louis. It may be noted, however, that the White Bear representative in 1904 was an extreme scow and a very dangerous challenger and won two out of the five races. She was beaten by Noorna, of Glencairn type. Noorna was fitted with curved bilge boards which were not used again, on account of the mechanical difficulties of fitting them, and their cost. An unsuccessful attempt was made to regain the cup from the Manchester Club in 1910. In this contest the limit of sail-area was raised to 650 feet, otherwise the boats were similar to those of 1902.

The establishment of the B class of the Interlake Yacht Racing Association at once became popular, and some twenty-five boats have been built for it and it remains today the premier racing class on Lake St. Louis, although the cruising boats and smaller classes, such as dinghies, also have their adherents.

The class was originally closely restricted, the limits being 32 feet overall, 350 square feet of sail, and a crew weight limiting it to three men, with scantlings practically the same as the A or Seawanhaka boats.

Photograph from Rudder, 1899

SCOW, CONSTANCE

The American challenger for the race in Canadian waters. This boat was defeated by Glencairn III

Eight boats were designed the first year, ranging from extreme scows to the canoe type. The experience with these seemed to settle that for Lake St. Louis conditions the modified scow, with a long elliptical waterline and at the deck a pointed bow, was the faster type; and a number of boats were built of this form before 1915, when the war caused all building to cease.

After the war only one boat was built in 1920, and this off the moulds of a 1914 boat but rigged with a jib-headed mainsail. To stimulate fresh interest, and in commemoration of the number of sailors who had not come back, an international Challenge Cup was given and a team match was arranged with the White Bear Club in 1921. Four new boats were built for the trial races. The B-class restrictions had been changed to allow a crew of four, and it was thought that with the extra ballast the strictly canoe type, with full length waterline and V-end sections, was worth trying again, the earlier experiments having shown the type deficient only in hard weather. Two of the new boats were of this type and two were short waterline square nose scows. As a result of many trial races, the 1920 boat and one of the new canoe type were chosen as defenders; both had jib-headed mainsails but of short luff because the rules limited the mast length to 32 feet.

The White Bear Club sent two extreme model scows; although designed with round bows on deck, and short waterlines, they had great power, were rigged with narrow mainsails and short flat gaffs allowing the throat to go close to the top of the mast. Under the conditions prevailing they had little difficulty in winning the cup.

In 1922 the Royal St. Lawrence challenged for the cup and sent two scows of the same general type as the White Bear winners of the year before. The White Bear Club was more than a match for the Lake St. Louis sailors and again won easily.

These reverses have not dampened the enthusiasm for the class. Several boats have been built since and Bootlegger, the faster of the two White Bear boats that won the cup, was purchased by one of the best sailors on Lake St. Louis and consistently raced.

She did not show the same marked superiority as in the cup races, getting only second place in last season's racing, although consistently well handled. It is worthy of note that the winning boat has a long waterline, some 30 feet, with a pointed bow on deck and comparatively easy bilges, the design being very similar to the boats that had been successful before the cup races in 1921.

From the experience of the last thirty years on Lake St. Louis, it is safe to say that the later rules under which the Seawanhaka races were sailed and the B-class rules prior to 1920 have developed types best suited to it for racing and day sailing. Moreover, as recent racing shows, the boats are by no means standardized and the designer has still scope for improvement.

The writer deplores, however, the increase of the crew limit as tending more to the racing machine and detracting from seamanship with only a slight gain in speed. Six years strenuous racing in the B class showed that three men were capable of handling efficiently the 350 square feet of sail with its corresponding kites. Again, Glencairn I, with 300 feet of sail, was handled by two men on a comparatively small deck area, her jib being set on a bowsprit and the end of her boom being far beyond reach. In 1897 boats with 500 square feet of sail-area were handled by three men. All of which confirms the opinion that the extra man is not needed except as shifting ballast. In this type, where the weight of crew on the weather rail is so great a factor in stability, the racing boat must take full advantage of it with a consequent loss in stability of form. With a crew of two men, the three-man boat will carry her sail better than a four-man boat, with a short crew, and be safer for ordinary sailing when it is not desirable for those aboard to clamber up on the windward rail.

EDITOR'S NOTE.—The international series of scow races inaugurated during the summer of 1926 and continued during 1927 between the sailors of Lake St. Louis, Canada, and the sailors of the Barnegat Bay, N. J., Racing Association is elsewhere described in this book, in a paper written on the subject of bilge-board scows.

EDITOR'S NOTE.—Mr. Duggan, the author of this chapter on Lake St. Louis yachts, has had a long and remarkably successful experience as an amateur designer and sailor of small yachts. He, when a youth, started sailing on Toronto Bay, and spent most of his spare time on the water until he graduated from college in 1884. While at school he designed several boats and was admitted as a junior member of the Royal Canadian Yacht Club. Joining other sailors who realized the necessity of a club that would more actively promote small boat sailing, he formed the Toronto Yacht Club, of which he was the first captain. He later took an active part in organizing the Lake Yacht Racing Association, that has done so much to foster small boat sailing.

After spending a couple of years on railway construction work, Mr. Duggan found occupation in Montreal where, again, he was attracted to sailing. At Montreal he was instrumental in organizing the St. Lawrence Yacht Club, of which he became Vice-Commodore and later Commodore. He designed a number of boats for Lake St. Louis, taking part, as well, in all the racing. In 1902 he moved to Sydney, Nova Scotia, and there he took an active interest in yachting and was Commodore of the Royal Cape Breton Yacht Club for three years.

When he returned to Montreal in 1910 he became interested in the establishment of the R class and raced in it until the war. Since the war he has been principally interested in cruising in boats too large for Lake St. Louis waters.

This brief outline of Mr. Duggan's active life, so inadequately describes his activities and accomplishments, that I am prompted to quote a few magazine references written about him. For instance, Mr. Day in the *Rudder* of August, 1896, wrote extensively on the subject and from one of his papers, I quote the following:

"For the first time an American yacht has met defeat when defending an international trophy. And a defeat such as cannot be explained away. A more decisive victory than that achieved by Glencairn has seldom been registered in the annals of yacht racing. On every point of sailing the Canadian craft was the boat—reaching, running, and going to windward, and she easily sailed away from El Hierie.

"If the Crane yacht had been just one boat, the significance of the victory would be less marked, but she is practically twenty-seven; and twenty-seven for whose bringing out all the talent of the eastern seaboard was laid under contribution. Men, who have some reason for believing that they are designers, engaged in building that fleet. It was one head against twenty. That is what makes Mr. Duggan's feat remarkable."

This great victory of Glencairn took the cup to Canada, where it remained for many years and was held against all comers in boats designed by Mr. Duggan. It is interesting to go back to the first international race, which Mr. Duggan briefly describes in his paper. In this contest the victorious American yacht Ethelwyn, designed by the well-known and much admired W. P. Stephens (an unquestioned authority on designing and sailing of boats since 1890) was rigged in a style far ahead of her day—a Marconi mainsail as we see it today, except that it was lower in the hoist. Although at that time Mr. Stephen's innovation was not adopted, it is today the standard rig for the sails of all scows and has been found most efficient under all conditions.

Mr. Stephens was a contemporary of Mr. Duggan during the exciting racing of the middle 90's and was a competing designer and skipper. After reading Mr. Duggan's chapter, Mr. Stephens wrote me that the author had failed to take credit to himself for the development of a new type of shoal-draught yacht, and a new system of designing this type; and further on in the letter, he said: "I think all credit for the scow type and for the full exposition and promulgation of its principle of design is due to Mr. Duggan." I feel this to be a fine tribute and that Mr. Duggan's contribution to the development of the present day racing scows is more far-reaching than anyone not familiar with the type would imagine. It is not possible in any other boat to get the experience, thrill, and sport that is offered by the sailing and racing of shallow draught scows. They are very remarkable boats, cheap in price, not expensive to maintain, light to handle but demanding a high quality of seamanship to manage. In addition to helping the sport that Mr. Duggan loves so well, he has been most successful in the fields of art and science, is a man of culture and of many friends and admirers, among whom I am proud to include myself.

BILGEBOARD SCOWS

By Edwin M. and T. M. Chance.

IN the early 90's a type of shoal-draught boat was introduced in England that came to be known as the Half-Rater. These boats were from 12 to 15 feet waterline length, with extreme overhangs forward and aft. The English boats were generally rigged with either a modified lug, or a sliding gunter, mainsail; with a jib carried either to the stem head or on a short bowsprit.

In the United States the boats were developed both as true fin keel types, carrying a bulb of lead on a plate fin, and as centreboarders. The owners and designers of English boats were interested in the American boats and for that reason races between the two countries were suggested. The first contests were staged by the Seawanhaka-Corinthian Yacht Club for the Seawanhaka-International Challenge Cup and were sailed between half-raters of this type, the foreign challenger being the Spruce IV and the American defender Ethelwyn, the challenger losing the series.

The racing of these small boats led a number of the men interested in the class to develop hulls of greater displacement and carrying more sail, permitting the use of larger crews. From this foundation arose the unrestricted classes of the Massachusetts Bay Yacht Racing Association, viz:

The 15-foot Class
The 18-foot Class
The 21-foot Class

In 1897 the Vitesse was built by C. D. Mower, and the success of this boat led Mr. Mower to construct the 18-footer Duchess in 1898 and the 21-footer Heiress in 1899. These boats were built to the extreme limit which was then thought possible for a hull restricted only as to waterline length. Their superiority caused interest, in the class in which they raced, to languish;

SCOW, CARTOON

Designed by William Gardner. Built in 1898—48 feet long overall; 25 feet waterline and 10 feet beam. This boat (a marvel for speed), was a fin keel model, lightly built with displacement of only 7168 pounds.

and, as a consequence, in a few years these classes were no longer sponsored by the Massachusetts Bay Yacht Racing Association.

During this period a similar type of 21-footer was developed for competition for the Quincy Cup, and the interest in this cup caused boats to be built even after they had no longer been sponsored by the racing associations. As the rules for the Quincy Cup restricted only the waterline length of the hull and the weight

of the crew, the more or less boat-shaped hulls of the Duchess and Heiress were found inadequate to carry the unlimited sail allowed under the rules. The first scows built for this class were, therefore, developed with the thought of obtaining maximum sail carrying ability, and in the hulls designed by Arthur Keith, such as that of the Hostess, a form was produced which permitted the carrying of very large sail-area with no dead ballast and very low crew weights.

In later years the rules for the Quincy Cup were amended to permit hulls of 25-foot waterline length to be built, with the result that the last races for this cup with boats of the unrestricted type produced the Outlook with a hull in excess of 50 feet overall length and a sail-area of over 2,000 square feet. The hull was of the lightest possible construction, being in reality a pontoon suspended below metal hogging trusses which ran above deck fore and aft, and through which the crew of five were forced to clamber every time the boat was tacked. Notwithstanding these extreme characteristics, the boat proved capable of sailing the necessary number of races to retain the cup, although its competitor, the Flashlight, is reported to have sailed with the weather corner of its scow bow twisted completely out of shape. The development of the unrestricted type of scow has been discussed at some length because it is desirable to point out the certain result of a racing rule that will permit the construction of boats designed to produce the maximum speed for a given length with no other thought in consideration. If owners had been satisfied to restrict themselves to hulls of the type of the Duchess, the Dauntless, and others of that period, there is no question but that these classes would have maintained themselves, because boats of that era were good for several years' intensive racing.

On the other hand, it is felt that even had the classes persisted, they would not have been as well suited to this type of racing as those to be presently described, which have survived almost 30 years of racing experience notwithstanding the introduction of the numerous Universal, International, and other systems designed to control the development of the racing boat, together

with the importation of purely foreign racing boats such as the Sonder, the 6-Metre, the 14-foot Dinghy, etc.

This second division of the minimum displacement live ballast racing boat, referred to in the preceding paragraphs, was simultaneously developed on the inland lakes of Wisconsin and

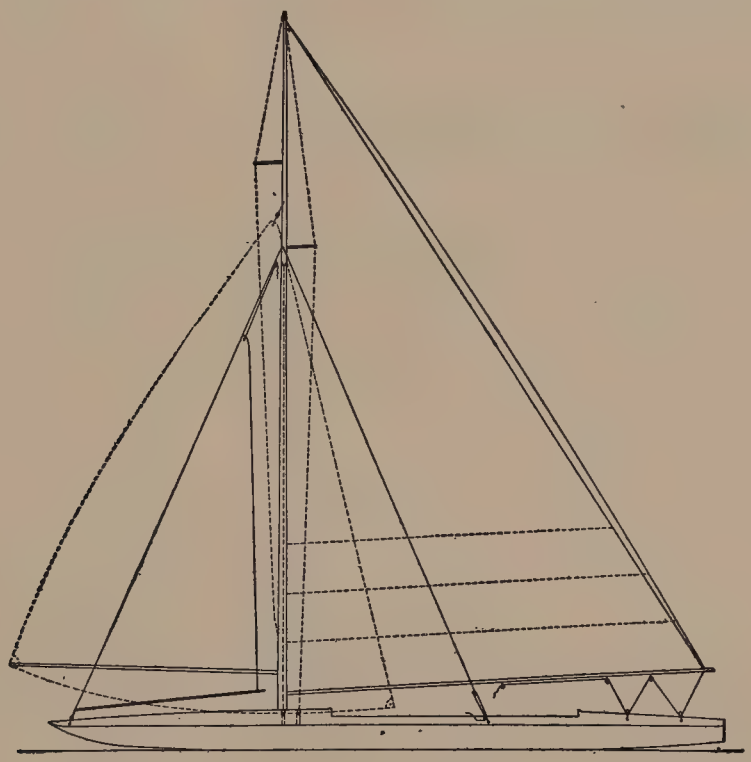
Photo by Stebbins

Scow, Hostess

Designed by Arthur Keith, 40 feet long overall, 11 feet extreme beam, 6 feet wide at bow and 8 feet wide at stern. This boat carried large sails (area 1023 square feet) and sailed without dead ballast and small crew. Boat was built in 1899.

Minnesota, the St. Lawrence River and Long Island Sound. It received firm foundation for steady growth by reason of the introduction of the so-called "Seawanhaka Rule" based on water-line length, the square root of sail-area and crew weight. Even this excellent rule would probably have led to the development of highly unsatisfactory features had not its application been changed in 1900 to permit but a fixed maximum sail-area, at

the same time giving latitude in design by allowing smaller sail-areas to be used with correspondingly greater waterline length. This amended form of measurement governed the international racing between the Canadian defenders and the American challengers for the Seawanhaka-International Challenge Cup, and



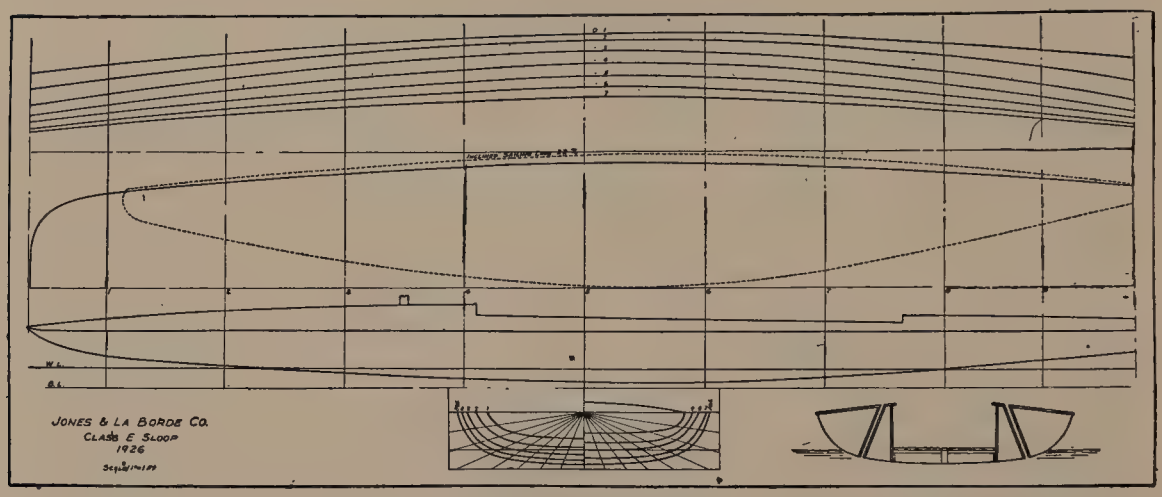
SAIL PLAN OF JONES AND LA BORDE'S LATEST RACING SCOW

also the development of the two classes of sloops raced in the Inland Lake Yacht Racing Association of Wisconsin and Minnesota.

In the early days of this Association the Seawanhaka type of boat was seized upon as a relief from the exhausting physical labor involved in sailing the sandbagger type of plumb-stemmed sloop which had been in use on the inland lakes. In 1900 the White Bear Yacht Club entered the international field, challenging the Royal St. Lawrence Yacht Club, the holders of the Seawanhaka-Corinthian Cup. The Canadians had originally won this cup with a boat designed by Mr. G. Herrick Duggan,

who had later successfully defended it with the so-called double-hulled Dominion against the Challenger, designed and sailed by Mr. Clinton H. Crane. The races in 1900 demonstrated the marked superiority of the hull design worked out by Mr. Duggan in the weather conditions prevalent on Lake St. Louis, the challenger Minnesota having insufficient power for the weather encountered.

In 1901 the English challenged the Royal St. Lawrence Yacht Club and brought over a scow of the most extreme type, having many innovations such as roller reefing gear for the jib and other



LINES OF THE PRESENT SCOW MODEL, SO POPULAR ON THE LAKES OF WISCONSIN AND THE WATERS OF BARNEGAT BAY

peculiarities in rig and hull design. Here again Mr. Duggan revealed his versatility, for notwithstanding the fact that the races were held in very light airs in which the Gray Friar was admittedly at her best, the powerful Senneville completely outclassed her. In all fairness to the English designers it should be noted that had they brought over the Insula, a boat similar in many respects to the Duggan creations, there might have been a different result.

By 1902 the Inland Lake Association had firmly established the single-board boat and had so far developed hull-form and rig that superiority lay largely in handling and in the conditions of the sails. In this year the challenge for the Seawanhaka Cup

was in eastern hands, but, motivated by the highest degree of sportsmanship, the challenging club invited open competition for the selection of the challenger. The elimination trials were held in the comparatively light air conditions of Long Island Sound and resulted in the selection of the Tecumseh, sailing from the White Bear Yacht Club, although others in the trial fleet appeared to be faster under Lake St. Louis conditions. The Canadians likewise built a number of defenders, from which the Trident was selected. This boat marked an entire change in the development of the minimum displacement boat generally termed the "Scow." She was fitted with three board trunks, one in each bilge at an angle of 19 degrees to the vertical and one in the usual centre position. This was entirely new in this class of boat, although contemporaneously with the construction of the Trident, the Pompano, a Quincy Cup 21-footer, had been changed from a boat with a swiveling fin keel to a bilge-board type, and the Tashmoo had previously been tried with leeboards.

In the trials of the Trident it soon became evident that the precaution of providing the usual centreboard was unnecessary and the well was taken out; the final series with the Tecumseh proved conclusively the superiority of the double-board arrangement. The Tecumseh was a true scow, designed by Jones & LaBorde, but was not as well suited to the heavy seas on Lake St. Louis as the Trident with its pointed bow. However, the superiority of the Trident was probably due as much to the double boards as to the difference in hull design, because it has been found that the performance of the double bilge-board boat in heavy weather is relatively better than in light.

In the ensuing years the double bilge-board type boat, which was very shortly fitted with double rudders by Jones & LaBorde, progressed steadily and a general form of hull became standard on the inland lakes. During this time the Seawanhaka challengers were generally scows of the square bow type, whilst the defenders, which were uniformly successful, adhered to the pointed bow, long waterline type of hull originally developed by Mr. Duggan.

In 1905 Mr. Edwin A. Boardman designed and sailed the

Manchester, challenging from the Manchester Yacht Club of Massachusetts. This boat was of a type quite similar to those developed by the Canadians, and the defender was decisively defeated in the series, there being no question that the Manchester was one of the fastest boats ever built for racing in the Seawanhaka cup competitions. In the trial workouts for this

Photo by Johnson Bros.

1926 JONES AND LA BORDE BILGEBOARD SCOW

The young famous skipper of Barnegat Bay, Slade Dale, is at the helm

series, Mr. Boardman experimented with the usual double rudder design, the rudders being inclined to the same amount as the bilgeboards, and also with rudders that were vertically hung. He believed the latter to be superior and used that arrangement in the cup races. This form of rudder design has persisted among some builders on the inland lakes but there is a division of opinion as to whether the greater resistance of the inclined rudder is not compensated for by their more efficient action.

Another innovation Mr. Boardman introduced was in the method of sailing a boat on a fixed course when going to windward, and allowing for variations in wind strength by easing the mainsail, this being accomplished by a jig on one end of the mainsheet. This method of sailing was believed by the Canadians to be partly responsible for the Manchester's success, although

Photo by Johnson Bros.

Bilgeboard scows—twenty-eight feet long overall—are the sportiest of boats. Note the windward rudder (not in use when boat is heeled). The starboard centreboard would show, also, if it were not up in the trunk. S–2 is owned and sailed by Mitchell Chance.

it has never been adopted generally by the Canadians, and in the international races of 1926 one of the Canadian boats to which it had been applied fell short of expectations. The probable truth of the matter is that the co-ordination of hull-form and rig on the Manchester produced a boat that was relatively so superior to the defender that she would have been successful with almost

any method of sail handling, although it is to be noted that the Boardmans were wonderful sailors.

The Canadian loss of the Seawanhaka Cup after so many years of successful defense caused interest to lapse in the racing for this trophy, and it was not until 1910 that the Royal St. Lawrence Yacht Club again challenged. Mr. Boardman produced a boat that when sailed in the conditions off Manchester had no difficulty in retaining the trophy. In later years competition for this cup was transferred to other classes, and at the present time it is one of those sailed for internationally in the 6-metre class, Mr. Clinton Crane having recently brought it back to this country from its temporary Scottish home.

Before taking up the later development of the lake scow, a word should be said as to the chief reasons for the ending of the Seawanhaka Cup competition. This was because under the Seawanhaka-Corinthian rules, no class restriction was placed upon the size of hull, the result being that the last Canadian challengers were in excess of 40 feet overall length; and, while they were still limited as to sail-area and crew weight, many other features of the hull and rig were at the mercy of the designer and owner, so that if any startling innovation developed superiority, older boats built to the same rule would be completely outclassed.

This trend was recognized by the Inland Lake Yacht Racing Association, and rules, governing design, rig, and scantling, were evolved that so limited the various racing classes as to insure real competition with a large number of starters. At the present time these rules have been so perfected that, a somewhat standard type of boat has been developed. Yet the designer has wide latitude in the general form of the hull, being at liberty to use a true scow, a pointed type of scow or a canoe form. He is still limited, however, to producing a boat of practically the same displacement and whose performance will be very similar to that of others in the class.

At the present time the three principal sloop classes fostered by the Inland Lake Yacht Racing Association are:

Class	*A*	*B*	*E*
L. O. A	38′	32′	28′
Beam	—	—	—
Sail-Area	500 Sq. Ft.	350 Sq. Ft.	285 Sq. Ft.
Weight of Crew	850 lb.	650 lb.	550 lb.

Of these classes, the A-boats are sailed in the Inland Lake Yacht Racing Association member clubs on the lakes of Wisconsin and Minnesota. These three yacht clubs also engage in inter-club and international races with this type of boat. The Class E boats are used both in the Inland Lake Yacht Racing Association and the Barnegat Bay Yacht Racing Association of New Jersey.

The E-class sloop was adopted by the Inland Lake Yacht Racing Association in 1924 and the rules governing these boats were approved in their entirety when the class was sanctioned by the Barnegat Bay Yacht Racing Association. The rules, therefore, represent the final development of the adopted method of restricting this type of boat and most thoroughly exemplify the conclusions drawn as to the desirability of properly controlling the development of racing boats noted in a previous paragraph.

The first year that this class was introduced on Barnegat Bay (1925) eight scows of the form generally used on the inland lakes were built, together with one of the pointed bow type developed on White Bear Lake, and really a descendant of Mr. Boardman's Manchester. In the summer of 1926, three more scows were added to the fleet, these being built to the minimum beam allowance of the class and with flaring top sides and minimum freeboard. The original eight scows, on the other hand, were built with hard bilges and maximum beam, and therefore had greater sail-carrying ability. The racing between these three divergent types of hull would appear to demonstrate that if the designer elects to choose a boat of maximum sail-carrying ability, such a boat will be at its best in the weather for which it is designed, whereas if either the pointed bow type or the minimum beam type is selected, the relative performance in heavy weather is necessarily sacrificed for superiority in light weather. A mean between these two extremes will produce a compromise boat

and the relative performance will be watched with great interest, it being entirely possible that such a mean type will be at a disadvantage at all times because it has not been designed to produce maximum results under any particular set of conditions.

Photo by Johnson Bros.

INLAND LAKE SCOW, JEAN

Tom Horrocks, owner, at the helm. He will be visible when the boat goes about

In the summer of 1926 an international series was inaugurated between the Royal St. Lawrence Yacht Club and the Barnegat Bay Yacht Racing Association, the Americans sending two crews to Dorval and the Canadians returning later in the season with

two of their crews. The New Jersey sailors were successful in winning the series. In the races at Dorval four distinctly different types of boat were sailed, all of them being class B boats, three of the pointed-bow and one of the scow type. The same boat won each of the races, no matter which crew sailed it, and the other boats would have finished in their same order had not the boat, which should have been in second place, parted its rigging, and finished third in one race. In none of the later races during the summer was this relative order maintained, and it is therefore reasonable to suppose that the condition of the sails and rigging during this series was largely responsible for the uniform relative performance of the several boats.

The above conclusion is apparently confirmed in the return series held on Barnegat Bay. In these races the four boats that appeared to be closest in performance were selected and were sailed in rotation by the several crews. The same boat won three of the races, with the winner of the fourth race in second place in the series. In the race lost by the winning boat of the series, she carried away a spreader and was seriously handicapped. This same boat in a race held just after the series won decisively. On the other hand, she had not won a race in two seasons, and in a contest sailed ten days after the international series finished in the last division of the fleet. In the summer of 1927 the international race between the same two clubs resulted in a victory for the Canadians. During the coming season the third and deciding series will be held.

All the classes of boats developed under the basic Inland Lake Yacht Racing Association rules are constructed under severe scantling restrictions requiring that the boats shall be thoroughly well built and of the minimum weight consistent with strength. Special woods cannot be used in their construction, and every care has been exercised to produce a boat that can be safely handled in any weather in which it is fit to race. Thus the boats are fitted with air-tight compartments which will keep the hull well out of water even though filled. The boats are required to carry anchors and life preservers, and the bilge boards must be so hung as to prevent their falling out in the event of a capsize.

Photo by Johnson Bros.

SCOWS ON BARNEGAT BAY

When picture was taken the boats were doing fifteen miles per hour

The basic soundness of the restrictions adopted is evident from the fact that after two seasons of intensive racing on Barnegat Bay, the hulls of all the boats are in excellent condition.

The restrictions as to the sail plan and rigging are quite as severe as those of scantling requirements. Thus, abnormally high masts in Marconi rigs are barred, sails of extremely light weight cannot be used, and so on. In Class E, only round spars may be employed and the more expensive streamline design may not be used. The sole thought here, as in the scantling restriction, is to produce a boat that can be continuously raced with the minimum expense to the owner.

The typical scow has a very flat floor, a firm bilge, and sections that are generally parallel throughout. It may or may not have a flaring top side and the sections may be carried out to bring the centre of buoyancy at about the centre of the hull or well aft of this centre. The matter of bow shape has nothing to do with the generic type, either the pointed-bow or scow-shaped type of hull developed under the rules being true scows. They depend entirely on the canoe-shaped waterline, when heeled for producing a form of minimum resistance, and both require the bilge boards to be so hung that they will be in a perpendicular position when sailing at the desired angle of heel. On the other hand, the canoe form developed by the Royal St. Lawrence Yacht Club is basically different, and while it is designed to sail at any angle of heel at which the bilge boards are perpendicular, still it does not reduce its displacement under any conditions of sailing. In other words, the canoe type cannot be caused to "plane" and when heeled down in heavy weather tends to edge sidewise into the water, whereas the scow form, when reaching at high speed, will lift bodily so that the actual displacement of the boat is reduced, and when well heeled tends to roll out and does not labor and slacken in speed when overpowered.

The scow form with a square bow has less sweep to the sides than the pointed-bow scow and generally does not possess the peculiar reverse curve shear plan of the latter type. On the whole, the square-bow type appears at its best in a greater variety of weather conditions than the pointed-bow boat, although in

weather best suited to the latter its relative superiority is at times astounding.

There is no question that the scow sloop is the fastest boat of its size that has been developed. This is due to the high

Photo by Johnson Bros.

It takes a strong wind to necessitate the reefing of the sails of a scow. This picture gives a good idea of deck arrangement

speed limit permitted by the hull form, the speed being impressively higher than that of the ordinary boat when there is sufficient wind to try both at their maximum. It has been claimed that these boats when reaching in a heavy wind will make a

full 16 miles per hour, and there exists little doubt that this is true.

The Class E scows are limited to a Marconi rig and it does seem that, under all conditions, the triangular mainsail gives the best speed for this type. In the A and B classes, the high-hoist short-gaff rig (in some places known as the Swedish) is also used, although in the last few seasons the Marconi seems to be growing in favor. In connection with this matter of rig, it is interesting to note that in a good breeze these boats travel so fast that there is frequently a flutter in the sail at the masthead similar to that noted in iceboats, because the boat is traveling so nearly at the speed of the wind it is impossible to keep the mainsail full.

EDITOR'S NOTE.—The Chance brothers have been for years devotees of the great sport of sailing. Recently they found a boat more to their liking than any other; hence, this chapter on their favorite—the Inland Racing Scow. These men, in their everyday, professional, and business lives, are prominent and successful. In addition to serving in the World War as Captain, Ordnance, and Major, Chemical Warfare Service, Mr. Mitchell Chance has for twenty years been identified with mining engineering and in late years specialized in the design of internal combustion machinery, and methods of coal cleaning, and ore dressing.

Mr. Edwin M. Chance, having specialized in chemistry at college, devoted twenty years of his early professional life to the chemical end of the coal mining industry. During the Great War he designed and built the Edgewood Arsenal and was in charge of the poison gas programme. After seeing service in the Argonne-Meuse offensive, he was honorably discharged from service with the rank of Colonel (Chemical Warfare Service). Since the war he has been identified with the engineering firm of Day & Zimmerman, Philadelphia, of which he is Vice-President and director.

It is to their credit that these men during their active careers have found time to devote to sailing. Their enthusiasm for Inland Lake Scows is very marked and the more I see of these

marvelous boats in action, the more I admire the Chances' judgment. They have both, for years, sailed on scows at Ocean City and Seaside Park, N. J., and were on board New Jersey boats in the international races between the sailors of New Jersey and Canada, which contests they were instrumental in starting. The Colonel, in addition to sailing small boats, is a great deep-water fisherman and is the owner of the 65-ton, Hand-designed Ketch, Nor'Easter.

Quite the most remarkable thing about Inland Lake Scows is their ability to sail, slightly off the wind, with great speed. It was noted by the regatta committee that one of the boats, Shadow, in a race on Barnegat Bay, sailed a 9-mile course at the average speed of 6.85 knots per hour, and at times attained a speed of 15 to 17 knots, when having the wind slightly abeam. The English magazine, *Yachting Monthly*, in November, 1927, contained a lengthy paper on this subject and in it the writer, more or less, challenged this claim of speed. He gave the speeds of some of the old-timers,—Thorella II, Manchester, and Kia Ora, and concluded his paper with a general comparison reducing all speeds to an equal basis and from which I quote.

"Of course all these boats varying in length it is necessary, in order to compare their speeds, that their lengths and speeds should be reduced to that of one common length, say 20 feet waterline, when the corresponding speeds became: Manchester, 6.85 knots triangular course, 9.8 knots maximum reaching; Kia Ora, 7.35 knots reaching course; Shadow, 7.26 knots triangular course; Craven, 7.0 knots before the wind. The corresponding wind speeds being in the case of Thorella and Craven's boat 19½ to 17½ knots and 28 knots respectively.

"All these speeds are, however, easily surpassed by that of a sailing canoe which Mr. Linton Hope states reached the speed of 9.0 knots in a fresh breeze and smooth water, her waterline length being 13.0 feet so that the equivalent speed for 20-foot length would be 11.2 knots."

It will be noted the writer fails to convert the speed of the Shadow, except in reference to her speed for the entire course.

I have witnessed these boats in many races and have seen

them, when in a plane, obtain a speed not possible for any other boat to equal. The roughness of the water hinders their speed but little. When the boats are sailing with wind slightly off the windward quarter, the science of maintaining this exceptionally fast going lies in the skipper's ability to keep his yacht in a plane. All of this Messrs. Chance saw years ago when they became interested in the scow type of boat, and for that reason they take advantage of every opportunity of advancing the class, for racing purposes. The boats cost little to construct, are easy to take care of, and provide a good boat for racing and pleasure sailing.

SAILING AT LAKE GENEVA, WISCONSIN

By Ernst C. Schmidt

ABOUT seventy-five miles northwest of Chicago, in Walworth County, Wisconsin, there is a beautiful lake, with high wooded shores, and having a depth of over 100 feet. This lake is nearly 8 miles long, and about 1½ miles wide, and is geographically known as Geneva Lake, but commonly called Lake Geneva after the town of that name located at the east end of the lake.

This lake was first visited in May of 1831 by John Kinzie and his family while on their way from Chicago to Fort Winnebago (now Portage) Wisconsin. It was inhabited at that time by the Pottawotamie Indians, who had villages at Fontana and Williams Bay, and called the Lake "Kishwauketoe", meaning Clear Water.

William P. Nelson, a resident of Lake Geneva at the beginning of the Forties, is said to have built the first flat-bottom boat used on the lake. Undoubtedly this boat was very similar to our present-day rowboats. Some time between 1840 and 1850, Captain Marshall hauled a schooner, 40 feet long, overland, from Kenosha, on two wagons. This was the pioneer sailboat on the waters of Geneva Lake.

In the early sixties, the first paddle wheel steamer appeared upon the lake. The boat was 40 feet long, and was built to be used for passenger service, but the undertaking was not successful.

Other boats followed these, and in 1900 there were probably twenty-five or more luxuriously equipped steam launches belonging to the summer residents of the lake. There was also a public boat company having over a dozen steamers, making regular trips around the lake. Some of the early residents and their decendants have summer homes on the beautiful shores of Geneva Lake.

SAILING AT LAKE GENEVA

There are no records showing sailboat racing at Lake Geneva until the summer of 1874, when the Yacht Club was organized. Some of the founders were Julian S. Rumsey, General A. C. Ducat, John W. French, John Bullock, A. C. Calkins, Al. Lytle, and N. K. Fairbank. The Lake Geneva Yacht Club was started so that a race, later known as the Sheridan Cup Race, could be

INLAND LAKES REGATTA—LAKE GENEVA IN 1925

When you see this great number of entries you can realize how popular small catboats are in their waters

sponsored. This race was held in honor of the famous General Philip H. Sheridan, who was a frequent visitor at the lake. The trophy, which is still sailed for on the last Saturday of August of each year, is a beautiful silver replica of the top sail sloop Nettie, belonging to Julian S. Rumsey. The Nettie won the first two races. The account published at that time in the *Lake Geneva Herald* of Saturday, September 5th, 1874, is of exceptional interest, and is quoted from as follows:

"On Monday last was sailed another exciting yacht race. A large number entered the race, but the interest centred in the Nettie by J. S. Rumsey, and the new yacht owned by John W. French. The race was arranged suddenly in honor of Gen. Phil. Sheridan, who has been a visitor for nearly a week among us. The cup is to be contested for each year on the thirty-first day of

LAKE GENEVA SCOWS—CLASS A BOATS IN 1922 REGATTA
The sails are of all kinds: regular, long gaff, short gaff, Swedish rigs and lastly Marconi

August, except when it comes on Sunday, and will be held by the winning yacht until the yacht is defeated, and over $200.00 has been contributed for it. Mr. J. S. Rumsey, who with the aid of Billy Wood, has won all the yacht races on the lake with his Nettie, holds the Champion Cup, and will hold it until he is defeated. General Sheridan, it is expected, will be an annual visitor to our lake to witness the racing in which he takes so much interest."

The Starters in the First Sheridan Regatta were:

Owner	*Yacht*
John W. French	French
Julian S. Rumsey	Nettie
John Bullock	Lillian
Gen. Arthur C. Ducat	Lotus
A. C. Calkins	Nellie
Al. Lytle	Shooting Star
Buhre	White Swan

From 1874 up to 1899 most of the races, of the sandbaggers, were held with time allowances, as these boats were of different sail-areas. In 1899 the present type of boat of the Inland Lakes Yachting Association was introduced.

In 1900 the Lake Geneva Yacht Club was host to the third annual regatta of the Inland Lakes Yachting Association. This

LAKE GENEVA SCOW

This picture shows how the author of this paper, and others, send their boats from one regatta to another

brought the new types of boat, namely, Class A and Class B boats, from many other lakes,—White Bear Lake, Lake Minnetonka, Lake Winnebago, Green Lake, and others.

In 1906, the Northwestern Regatta Association was organized, and the first three regattas of this organization were held at the new clubhouse at Cedar Point. The Class A and B fleets had developed in speed and numbers since the regatta of 1900, and a small class, known as class D was also represented. All three of these regattas were very successful, especially the one of 1908, as there was a strong wind on all race days.

In 1911, the annual regatta of the Northwestern Regatta Association was again successfully held on the lake under the auspices of the Lake Geneva Yacht Club.

In 1915 the Northwestern Regatta Association was united with the Inland Lakes Yachting Association, which organization held its twenty-fifth annual regatta at Lake Geneva in 1922. The headquarters were in the city of Lake Geneva. The Class A fleet had fifteen entries, and the Class C boats about twenty-five catboats. The Class B boats ceased to exist about 1916. The regatta was not a success because the wind was not satisfactory, there being either very little of it, or a gale.

SENTA II

Lake Geneva Scow that won the Sheridan Race in 1925. Ernst Schmidt at the helm. Note the short gaff

In 1925 the Lake Geneva Yacht Club again entertained the Inland Lakes Yachting Association. The Class A fleet had twenty sloops, the Class C fleet fifty-six catboats, and a new Class (E sloops) of which there were six.

The sandbaggers were replaced by the scow type of boat in 1899. The Class D catboat of the Northwestern Regatta Association type, was 18 feet long with 225 square feet of sail-area. It has been replaced by the present Class C catboat with the same sail-area, but with hull 2 feet longer, and is a much more

serviceable and seaworthy boat. Most of the other sailboats used for racing are of the type known as Inland Lake Scows, classes A, B, and E.

EDITOR'S NOTE.—Mr. Schmidt is one of Lake Geneva's most enthusiastic sailors and a worker, being Vice Commodore of the Lake Geneva Yacht Club, as well as secretary and treasurer of the corporation that owns the property on which the clubhouse is located.

He has owned in succession catboats Ontagamie and Water Witch, with which he won the Northeastern regatta on Lake Mendota in 1914, and in the same year the Inland Lakes Yachting Association regatta at White Bear Lake.

During the past ten years his sailing and racing has been done in racing scows. His Class A boat, Senta II, especially good in light weather, won the Sheridan Cup race in 1925.

It is especially interesting to yachtsmen who live near and sail on large bodies of salt water to get a glimpse of how much sailing can be done on a fresh water landlocked lake about 8 miles long. It is striking, also, that the boats they use (inland lake scows), when taken to large bodies of water like the Sound and Barnegat Bay, are found so capable of doing what they are called upon to do.

The State of Wisconsin is one great mass of small lakes, the largest of which is Winnebago, about 30 miles long. The competitive spirit, so necessary for successful racing, is kept up and the interest greatly increased, because the lightness of scows, and their shape, makes it possible to truck the boats overland to other near-by lakes for a change of scene, or an important regatta.

This will, no doubt, present new thoughts to the owners of deep draught keel Star boats and others, and demonstrate that all the fun and sport in yachting is not confined to long voyages on deep seas, or races held within the sound of breakers.

The sailing on Lake Geneva represents rather well the sailing on the other Wisconsin lakes, except that done on Lake Winnebago, which is about 125 miles north of Lake Geneva. Winnebago

is located a few miles west of Lake Michigan, and is connected with it by a river and waterway, that provides an outlet for voyages of as many thousands of miles as anyone would like to take. The others, except the lakes that are located near rivers, are without outlets, so they haul their boats by truck, like canoes.

All the Wisconsin lakes offer fine opportunities for ice boating in the winter, and it is on these lakes that the ice yacht has developed in late years.

THE FOURTEEN-FOOT NATIONAL DINGHY CLASS

By Bruce Larkins Atkey

SINCE 1887, when I began, at the age of eleven years, to take an active part in sailboat racing, no class of craft has aroused so intense and widespread an interest as the 14-footers, in the few years of their existence as a recognized racing class.[1]

In 1923 a few members of the Island Sailing Club at Cowes took action to promote open boat racing. The club was originally formed for this purpose, yet at that time it was not sponsoring a single event of this kind.

The sentiment of the club was that all yacht-handlers should have experience with open boats, and it was decided to introduce a class of 14-foot open boats, conforming with the regulations of construction prevailing on the southwest coast of England, and on the Norfolk Broads.

[1] The Y. R. A. ruled that for 1928 the 14-foot dinghies are no longer allowed any ballast whatever, and that 22½ feet above the gunwale line is the maximum of a mast if fitted with a Bermudian mainsail.

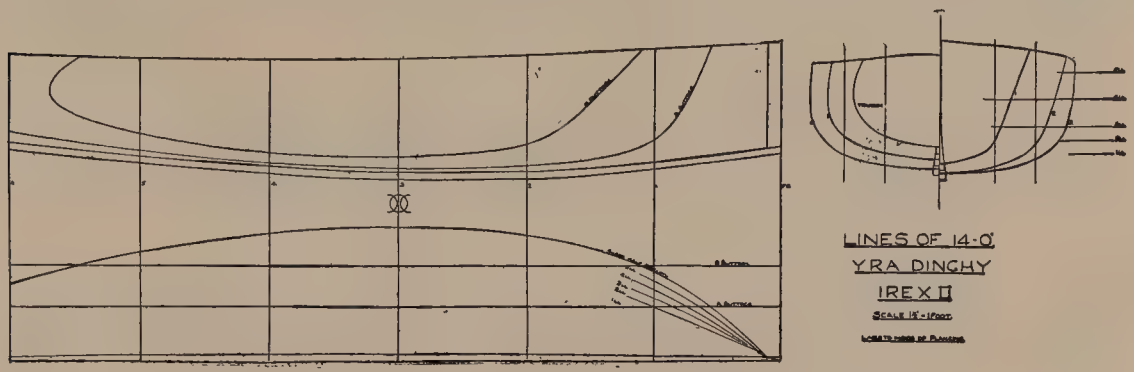
However, the peculiar short and steep little seas characterizing the Solent seemed to make advisable the building of a heavier and more seaworthy 14-footer than those in use elsewhere in England. Charles Nicholson, Esq., of Gosport, celebrated designer of many successful yachts in England's racing fleet, was

FOURTEEN-FOOT NATIONAL DINGHY CLASS, IREX II
Sail Plan by Ratsey and Lapthorn
Areas: Lug — 101.75 square feet
85% Fore — 22.95 " "
124.70 Y. R. A.
Light tacking foresail 37.5 square feet
Spinnaker 50 " "

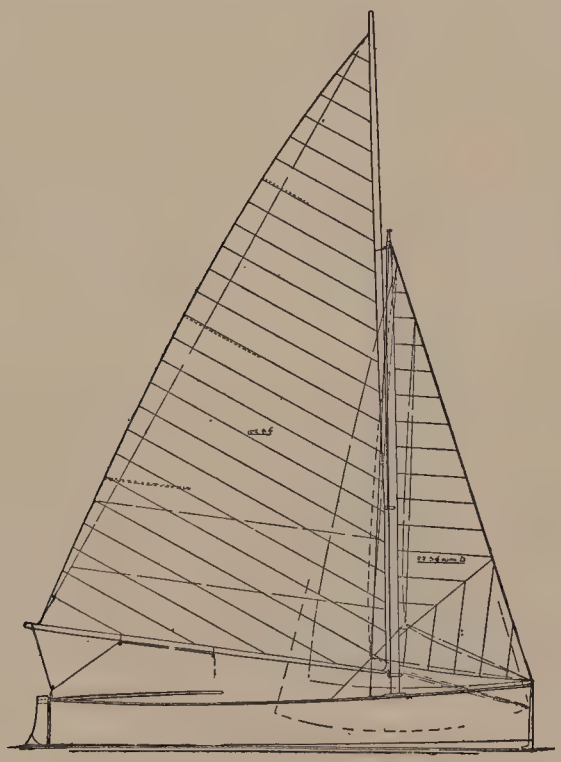
asked to cope with the problem, and he very kindly and gratuitously, presented a set of lines to Christopher Ratsey, Esq., to whose hands the Island Sailing Club has entrusted the matter.

The design was accepted, but at first the response of the members was slow. C. Ratsey and Damant, through their deter-

mination to carry out the formation of the class, built boats. The writer, feeling that two boats did not make a class, joined



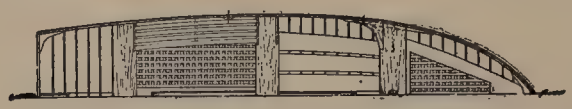
FOURTEEN-FOOT NATIONAL DINGHY—LINES OF IREX II



SAIL PLAN OF THE POPULAR BRITISH FOURTEEN-FOOT NATIONAL DINGHY CLASS
By Claude G. Inman, designer

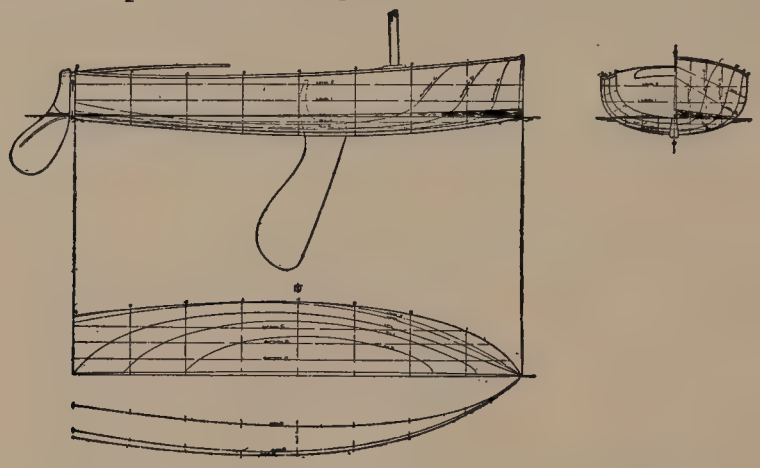
them, so that in the first year there were but three boats. He also exhibited his 14-footer in London, to interest the general public and prospective boat owners.

The following year found several other owners in the running, and the class has grown every subsequent season. The design



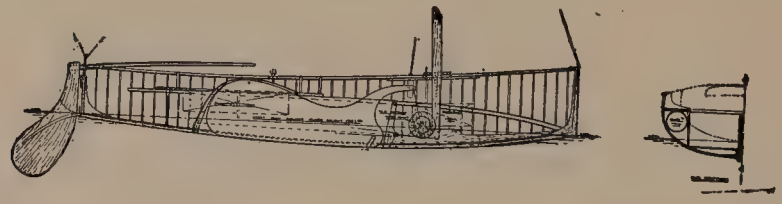
ARRANGEMENT PLAN OF THE POPULAR BRITISH FOURTEEN-FOOT NATIONAL DINGHY CLASS
By Claude G. Inman, designer

leaves it to the builder to choose either clincher or carvel construction, with spruce, mahogany, teak or other materials and



LINES—FOURTEEN-FOOT NATIONAL DINGHY CLASS
By Claude G. Inman, designer

scantlings, according to their fancy. Some have bowsprits, while others carry their staysails to the stemhead.



ARRANGEMENT PLAN OF THE POPULAR BRITISH FOURTEEN-FOOT NATIONAL DINGHY CLASS
By Claude G. Inman, designer

The boats, professedly conforming to the design, varied widely in position of maximum beam and shape, weight and finish, but

when they began racing, success was instantaneous. They made great racing and interest flamed high. The East Cowes Sailing Club caught the fever, the Cowes Town Council gave a Challenge

IREX II

This boat defeated thirty-eight competitors on August 1, at Cowes, for the Challenge Cup presented by H. R. H., the Prince of Wales. This view shows her going south in Cowes harbor, offering a fore-and-aft view. Note that in a moderate wind the two hands sit inside. She was built high-sided to keep the water out of her and to offer less windage than with the hands perched on the gunwale. Note the very small water disturbance caused by the hull, the flatness of her sails and the bending of the yards. The lightness of the hull is evidenced by the striking fact that the pressure of the sails has twisted the hull so that it is not at right angles to her transom and the vertical line of the rudder.

Cup, yachtsmen gave prizes, and all the Solent regatta committees added the event to their programmes, so that soon there were over fifty races for this class each season.

The Royal Victoria Yacht Club at Ryde, Royal Southern at Southampton, Royal Motor Yacht Club at Hythe, and other clubs on the Solent gave races for them too, in their fortnightly meetings.

For three years the Cowes-built knockabouts held the stage. Then Morgan Giles, Esq., of Teignmouth, almost the sole designer and builder of the west of England 14-foot class, brought one of his new types to Cowes in August week. The racing proved that his low-sided, fast, and somewhat tricky hull, when well handled, was quite capable of tackling the weather and short steep seas of the Solent.

This demonstration stimulated a young Cowes boat builder, Mr. Uffa Fox, to emulate the Giles type, and he designed a boat with fittings and gear cut down to the minimum weight, with a very light hull and everything in design and finish conducive to speed.

Mr. Fox's success made a great change in the Cowes boats, and launched a wave of experimentation, tending towards lightness, and further smoothing and polishing of the exterior of the hulls to minimize skin-friction. New boats were built by many of the owners, and in 1927 thirty-seven 14-footers from the home port, the Norfolk Broads, Bristol Channel, Teignmouth, and Solent, crossed the line at Cowes within about a minute or so of each other, when sailing for His Royal Highness the Prince of Wales' Challenge Cup, which was won by Irex II, designed and built by the writer, and steered by his son.

To date there have been issued over 130 certificates, which documents all boats must have, after being weighed and tested for floating by their air-tanks. The evolution of this class has thus adequately met a demand for a boat that teaches the beginner how to handle sail, and which can be raced throughout the season.

In the early days, the mast was carried well forward and fitted with a single lugsail. The boat, therefore, had to be built with

ample beam, carried well forward; fairly flat in the floor, but with full lines at her entry, and powerful shoulders, to give the necessary stability to withstand the pressing power of a single sail.

It was soon found that the same shape hull with the mast a trifle further aft, some 2 feet, 3 inches from the stem, and fitted with a staysail on a short bowsprit or down to the stemhead, could easily beat the other boat on the wind, and when reaching.

Photo by Beken

RESTLESS IN FIRST PLACE—IREX SECOND

So nowadays the boats are all fitted in this latter way, thus easing the bowlines. You will see them today along the whole south coast of England, at a few places on the east coast, on the Norfolk Broads, on the Cumberland Lakes, and on the Thames. They are used for cruising, as well as for racing, and so are made as comfortable as a fast open boat can be.

As to seaworthiness, they have been known to sail from port to port along the coast; and around the Isle of Wight, a trip of some 65 miles, in a day.

They are undoubtedly the fastest sailing boats of this length yet produced and are remarkably buoyant and weatherly; quick on the helm, owing to their curved or camber keels, and one gets splashed considerably in strong winds. However, balancing this is the fact that they never ship heavy water, and in moderate breezes on smooth water they are a positive delight to handle.

ROUNDING THE ROYAL YACHT BUOY

Number 78 attains first position by clever sailing. His boom shows white, indicating that he reefed while running, though only a boat-length ahead of No. 23. He ran up in back of three other boats and to cheat the tide he kept in through their weather, then bore away when clear of them, thus reaching the buoy in time to get the inside berth to luff round. This move won first prize.

They all run cleanly and fast and are good sailing boats in every respect. Some few show up better on a reach than others, but very likely this is due to better handling, sail trimming, weight disposition of crew, and expertness in taking advantage of tides, local eddies, and every little puff. During the last three years of

racing I have heard no suggestion for their improvement, so they must have reached a fair degree of perfection.

Their specifications require that they must not exceed 14 feet in overall length, with a minimum beam of 4 feet, 8 inches. The maximum draught of the hull to the weight of 380 pounds with

OFF THE GREEN

This cut shows five fourteen-footers scrambled in an unique manner. They have just rounded the western mark off Cowes during an evening race and are heading back eastward, with a moderate westerly wind. The tangle came about in this way. Number 22 got round first by shooting between No. 116 and the buoy on the turn. Number 78 was right on the tail of No. 116 and by taking her wind, got across her weather and into second position. Number 116 then had to bear up to go under the stern of No. 23, and she luffed a trifle, as her sails show, to pass to windward of No. 78.

The fifth boat made the master move. When she had rounded she saw that she could not clear No. 23 without hitting No. 116. If she had luffed she would have hit the mark, so her helm was shoved hard down, before her crew could ease the staysail sheets. That accounts for her hard list in so light a wind. There is no wind in her lug and her staysail is flat aback to windward. All this happened in about a minute.

gear, must not exceed 1 foot. They do not carry ballast, although it is allowed if declared when the boat's weighing and certificate test is gone through. They must be entirely open. Any type of construction and any material is allowed.

They are practically all fitted with standing lug and staysail to the stemhead. Some have roller staysails, but most are set flying. Reaching staysails are allowed, and spinnakers are carried. The length of the spinnaker boom must not exceed the distance from the fore side of the mast to the stemhead. Many boats have their staysails fitted on a boom, hinged on the foreside of the mast, which is then used in heavy weather as a spinnaker, it being found to balance well, with a reefed lug.

Almost all are now fitted with rolling reefing booms, and it is not uncommon for a boat to be reefed and unreefed eight or ten times during a race. They carry 125 square feet of canvas, divided between two sails, when racing on the sea, and 140 feet on inland waters. Their spinnakers are hoisted to the same height as the staysail halyards, and owing to the shortness of the spinnaker boom, which is only allowed to be set from the mast, they are not unduly large, and thus quite easy to handle.

A complete set of four sails of best make costs in the neighborhood of £15. The boats themselves, complete, vary according to the construction and build from £85 to £130.

The keel must not stand below the garboard planks more than 1¼ inches, and the centreboard, when housed or pulled up, must not stand above the line across from gunwale to gunwale. Centreboards are of iron, either wrought or cast, or of yellow metal, and vary widely in shape and weight, according to the designer's fancy. They are all, without exception, hinged or slung on one bolt foreward, and manœuvred by the aid of a drum winch actuated by a lanyard. The general weight is about 112 pounds, though some have raced with small boards not exceeding 48. The maximum known to the writer is 140. Whatever board is weighed when the certificate is issued must be used during that season, unless a fresh certificate is obtained.

The planking is generally of 3/8" spruce, cedar, or mahogany, and fittings of gun-metal, aluminium or gale wrought steel. The

rudder is deep, curved, and sometimes slightly balanced, and the tiller passes through the transom. The sides of the centreboard case are generally built of one plank, through fastened and strengthened by six or eight gun-metal knees, and a thwart, securely fastened by two oak knees to the boat's side, and to the top of the centreboard case; the mast partner or thwart is generally fitted

Photo by Beken, Cowes

IREX II AND ALSANI

Shows both boats reefed, with the yards away from the mast when the sail is rolled around the boom. Irex's mast (No. 78) slopes aft a bit, preventing the boat from being depressed when running in a breeze. Alsani, double-skinned and diagonally built, of amateur production and design is the winner of several prizes.

from gunwale to gunwale and very solidly tied with oak knees fore and aft and vertically over three planks. The spars must not exceed the length of the boat and the mast must not exceed 14 feet, 6 inches in height, when stepped above the waterline.

They are owned by all classes of persons, carried often as Yacht's Boats, sometimes kept as out-and-out racing machines, scrupu-

lously sponged out and washed with fresh water, polished and enamelled up to their waterline with varnished topsides. They are quite easy to learn to manage; are rigged simply with stay-sail, spinnaker, and wire lug halyards with a whip, and one other wire halyard to support the head of the yard.

Each boat must be tested with her air-tanks sufficient in number and capacity to support the boat and her gear, when capsized

Photo by Beken, Cowes

FELIX

The Felix, No. 23, is one of the original Cowes fourteen-footers

or filled with water, together with 112 pounds of iron. Four or more metal cylinders are generally used, strapped into place under the thwarts. So far in the annals of the 14-footers on the Solent, no one has had worse than a pleasant bath, the occasion coming when misjudgment has caused a boat, racing in very heavy weather, to take in more water over the lee side than the crew could bale out while continuing on their course.

Prospects for 1928 promise a host of new 14-footers. The class

is still growing in popular esteem. The boats are being built at Cowes, Teignmouth, and elsewhere, and at many places outside of

Photo by Beken, Cowes

SCUD

One of Morgan Giles' latest, the Queen of the Norfolk Broads. The boom kept very high up and the tiller is long enough to get the crew well up in the middle of the boat. The horse forms part of the transom, which is cut out for the tiller to pass through.

England, and it is not beyond reason to look forward to the early establishment of the 14-foot dinghy as an International class.

The Solent Clubs are eager to welcome American competitors

in their races next summer, as well as entrants from all other nations. The editor of this book has been kind enough to offer the Atkey-Schoettle Challenge Cup for the 14-footers as a graceful

Photo by Beken, Cowes

SNARK

A fifteen-year-older, originally built for the west of England, one-design class, but fitting the present-day class after a few slight alterations. Mr. Giles says that none of his latest show any improvement in speed on this pioneer. She is being steered by the only lady helmsman they had at Cowes in 1914, Mrs. Richardson, daughter of Gartside Tipping, Esq., of Wootton, Isle of Wight, an old yachtsman who lost his life in the patrol service in the Dover straits near the end of the war.

gesture of thanks for this article, and the Solent fleet feels an additional bond with its brother fleet on the west shore of the Atlantic.

I am indebted to those whose assistance, notes, and references have been furnished me, such as Messrs. Morgan Giles, Charles Nicholson, Uffa Fox, Christopher and Colin Ratsey, and the

Photo by Beken, Cowes

GREAT BEAR AND FOX HUNTER

Two of the Uffa Fox boats. Note the large amount of broken water under their bows for half the length and how easily they leave the water. Both are reefed and travelling at their fastest speed, about five miles the hour. The crew are up on the gunwales, since the boats will not go at all if not upright.

Secretary of the Island Sailing Club. The remarkable photographs of Mr. F. Beken of Cowes are of unique interest.

Appended is a list of the entries received for the race held August 1st, 1927, giving the names and numbers of the boats, with their owners.

EDITOR'S NOTE.—Mr. Bruce L. Atkey has been prominent in yachting circles for many years. He and his son conduct a business that builds boats and manufactures yacht fittings of all kinds. In the sailing game he was the pupil, at the age of 14, of the celebrated Tom Ratsey, the well-known owner of the yacht Dolly Varden, which vessel is now over fifty years old and in use. During thirty-six years of sailing experience he has skippered boats of all kinds from the old half-raters up to the 23-metres and handicap classes of boats, from five tons to 100 tons. At Cowes he has sailed in all handicap classes and is the owner of several boats. He expresses a fondness for a boat particularly suited to English Channel and Solent waters, known as the Itchen Ferry type, square stern cutters. His paper shows a keen knowledge of point sailing and details of the popular 14-foot Dinghy class. Like most owners of large boats Mr. Atkey knows the value and sport in the smaller classes.

I am publishing the following specifications by courtesy of *Yachting Monthly*, November, 1927:

FOURTEEN-FOOT NATIONAL DINGHY

SPECIFICATION (ABBREVIATED)

L. O. A., 14 ft.; Beam, 4 ft., 8 ins.; Draught, 7 1/4 ins.

Main Keel.—American elm 1 5/16 in. moulded by 3 ins. sided amidships, tapered to run out fair to 1/4 in. at fore edge of stem and to 1 in. aft. Hog piece of American elm 3/8 in. by 4 1/2 ins. amidships tapered as required to give a 3/4 in. back-rabbet for garboards.

Planking.—Best Honduras mahogany, close seamed.

Timbers.—All steam bent Canadian rock elm 3/8 in. by 1/4 in. spaced 4 ins., faces to be machine rounded. Heads of timbers to slot into gunwale.

Floors.—Sawn oak floors sided 5/8 in., fitted as indicated on construction plan.

Gunwale.—Canadian rock elm 1 in. by 3/4 in. amidships, tapered slightly towards ends. A beading to be cut on lower edge, and on inside top edge; this to continue around knees on mast thwart and across upper edge of thwart and around rowlock swells and to be cleanly and neatly cut.

Thwart Rising.—2 ins. by 1/4 in. mahogany, with a neat beading on both edges.

Rubbing Band.—1 in. half-round American elm.

Thwarts.—Mahogany 3/4 in. by 7 ins.; mast thwart 7/8 in. by 8 ins. fitted down to stout fore and aft clamping pieces of mahogany worked under gunwale and securely through-fastened through each timber. Grown oak knees one under and one on after edge each side, as indicated on plan. Mast thwart to camber 1 in. above gunwale.

Side Benches.—(Open work.) Mahogany, four battens on each side. 1 1/2 ins. by 5/8 in. finished, spaced 1 in., well-rounded on tops and supported with turned leg in middle.

Centre-board Case.—Side of clean, well-seasoned 3/4 in. mahogany, in one width, same to be carefully fitted down on to hog, bedded with white lead and varnish cream, and secured from outside with 3 in. brass screws, spaced 4 ins., countersunk 1/2 in. into main keel, and dowelled; the sides of case to be carried forward, forming step for mast and seating for centre-board hoisting gear as shown. The sword pieces at ends of case to be mahogany, full 7/8 in. thick, the filling between the forward side-extensions being gradually reduced to 3/8 in. in thickness right forward in order to spring the trunk open to a maximum of about 1 in. amidships. Fore and aft clamping pieces 2 3/4 ins. by 3/8 in. to be carefully fitted down over end of the timbers amidships and fastened to sides of case with brass screws closely spaced and well staggered. A neat 5/16 in. mahogany capping to finish top of centre-board case as shown.

Burden Boards.—To be openwork, worked in three strakes on each side, of American elm or larch, 5/12 in. off saw.

Rudder.—Main piece of mahogany 3/4 in. finished, with 3/4 in. cheeks of same material, all securely screwed together and screw heads carefully dowelled over. A 1/4 in. half-round copper shoe to protect the underside of blade. Blade to be carefully tapered towards edges.

Bilge Strakes.—Of American elm 5/8 in. by 5/8 in., 5 feet long.

Fittings.—(Of yellow metal throughout.) To include "M–G" rotary keelhoist, as shown; stemband and foreshoe, combined with eye for forestay; 3/16 in. brass keel band; main-sheet horse to be

made up from 3/4 in. diameter solid drawn brass tube worked over top of transom, tiller to work below same as shown. Rudder braces with long lower straps for 3/4 in. wood; pintles 7/16 in. diameter; rowlocks 2 1/4 ins.; chain-plates 8 ins. long.

Fastenings.—Copper nails clenched on rooves and brass screws throughout.

Centre-board.—Cast from best tough iron from wooden pattern full 7/8 in. thick in blade, tapered to 3/8 in. at arm, the casting to receive two coats of filling composition before being painted. Approximate weight, 150 lbs.

Spars.—Either of best selected yellow bamboo or solid spars of selected silver spruce cut and finished to plan.

Rigging.—Standing rigging, shrouds and forestay of best galvanized plough steel wire rope 3/8 in. circum.; centre-board wire of best flexible steel rope of 5/8 in. circum., with 2 3/4 ins. circum. soft white cotton fall on the drum. Halliards of best flexible steel wire rope 1/2 in. circum., with white manilla purchase 1 in. circum., three-strand.

Sheets of best white Italian hemp or cotton rope, 1 1/2 ins. in circum., three-strand.

Sails.—Mainsail; large reaching jib; second jib; small jib and spinnaker by approved sailmaker, of best Egyptian silk. Green Willesden waterproof mainsail cover and bags.

Equipment.—To include all spars, sails, running and standing rigging as above, and also one set of four copper buoyancy tanks with screw-in sweat plug, one pair 2 1/2 in. gunmetal rowlocks, one pair best straight-bladed white pine sculls, 8 ins. long, leathered and copper shod, rudder and tiller; long-handled bailer, spongs, 6 fathoms 1 1/2 in. circum. white Italian hemp painter, one light galvanized kedge anchor, and 20 fathoms light line.

YACHTING ABROAD

By Gerald T. White

INTERNATIONALISM in sport has never been general. In the United States baseball and football share honors, with the latter more truly representing the American spirit. In England cricket and their own variety of football similarly share the limelight. Perhaps tennis is more nearly international than any of the other field sports, but no outdoor endeavor can approach yachting for its universal popularity.

Probably I am laying myself open to just criticism by comparing yachting with such commercial sports as football and baseball. Yachting is not a game for spectators but one interesting only to participants. In the entire realm of boating there is only one phase which interests the spectator. That phase is the racing of high-speed power boats. As this article is devoted to the sailing yacht and not to the power boat we are unable even to outline the tremendous public interest in high-speed racing, but will discuss, instead, the interesting features of the sport of yacht sailing as they are found throughout the world.

Because of other chapters in this book which apply particularly to yachting in England and in Holland, we will give but scant attention to those nations in this screed. Neither will affairs in the United States be considered, for obvious reasons. As Canada is so closely allied to the States in a sporting sense it may be said that her yachting is similar to our own in every important sense of the word and that no particular lessons may be drawn from an analysis of the sport in the Dominion.

The remaining portion of North America includes Mexico and the Central American nations. Considered from a yachting standpoint the hectic republics of the isthmus are entitled to but little description. There is a bit of power boating in Mexico, Honduras, and Nicaragua, but the only sailing yachts belong to

Americans or Europeans who are engaged in business in the tropical republics.

In the Canal Zone there are thousands of Americans employed in the management of the Panama Canal and in the administration of the laws of Uncle Sam and a number of these men own sailing yachts of the open type. Racing is rather popular and

YACHTING, BRITISH COLUMBIA

the section only needs a leader to become the leading tropical yachting centre.

Before following down the isthmus to South America let us guide our ship of the imagination to the islands of the Caribbean, Cuba, Isle of Pines, Jamaica, the Barbadoes, all have yacht clubs and a great deal of yachting interest, particularly in the afternoon racing field. For the most part the boats were purchased from the United States, but a few of the craft were shipped in from England. Hayti and San Domingo have no yachting, not having reached a degree of civilization where fighting can be

AMOY, ALWAYS PICTURESQUE AND ALWAYS INTERESTING

laid aside long enough to engage in a normal sport. Still sticking to the islands, but coming up the coast, we find little Bermuda well out at sea and the Bahamas close to the Florida Coast. These British possessions are greatly interested in sailing and each year hold regattas which vie with many in America for interest.

Photo from Frank S. Pugh

HAWAIIAN FISHERMEN ON THE REEFS AT NIGHT

Readers who remember the Sonder class sloops will be interested to know that a number of those fine boats are still in active service in the British island possessions in the Atlantic. Let me digress for a moment to deplore the fanaticism masquerading as patriotism which caused the Sonder class to be placed in the discard just because the type originated in Germany. Before the war Sonder racing had a greater appeal than the present 6-metres are able to muster but the class was doomed from the time when the mention of anything German was anathema.

Photo by F. J. H. Stone

A Japanese Sloop

In South America sailing centres are chiefly in the big cities of Rio de Janiero and Buenos Aires. A few yachts are built in those ports, often from designs by American naval architects, and some boats are imported from Europe. Both cities have active clubs and both cruising and racing boats. The Latin spirit turns more to the open racing boat than to the heavier cruising type, a fact heightened by the lack of protected waters for extensive cruising.

The west coast of South America will never be a yachting centre for geographical reasons. Successful boating must come from waterway development. The Pacific slope of our southern continent has but few harbors which are even satisfactory for

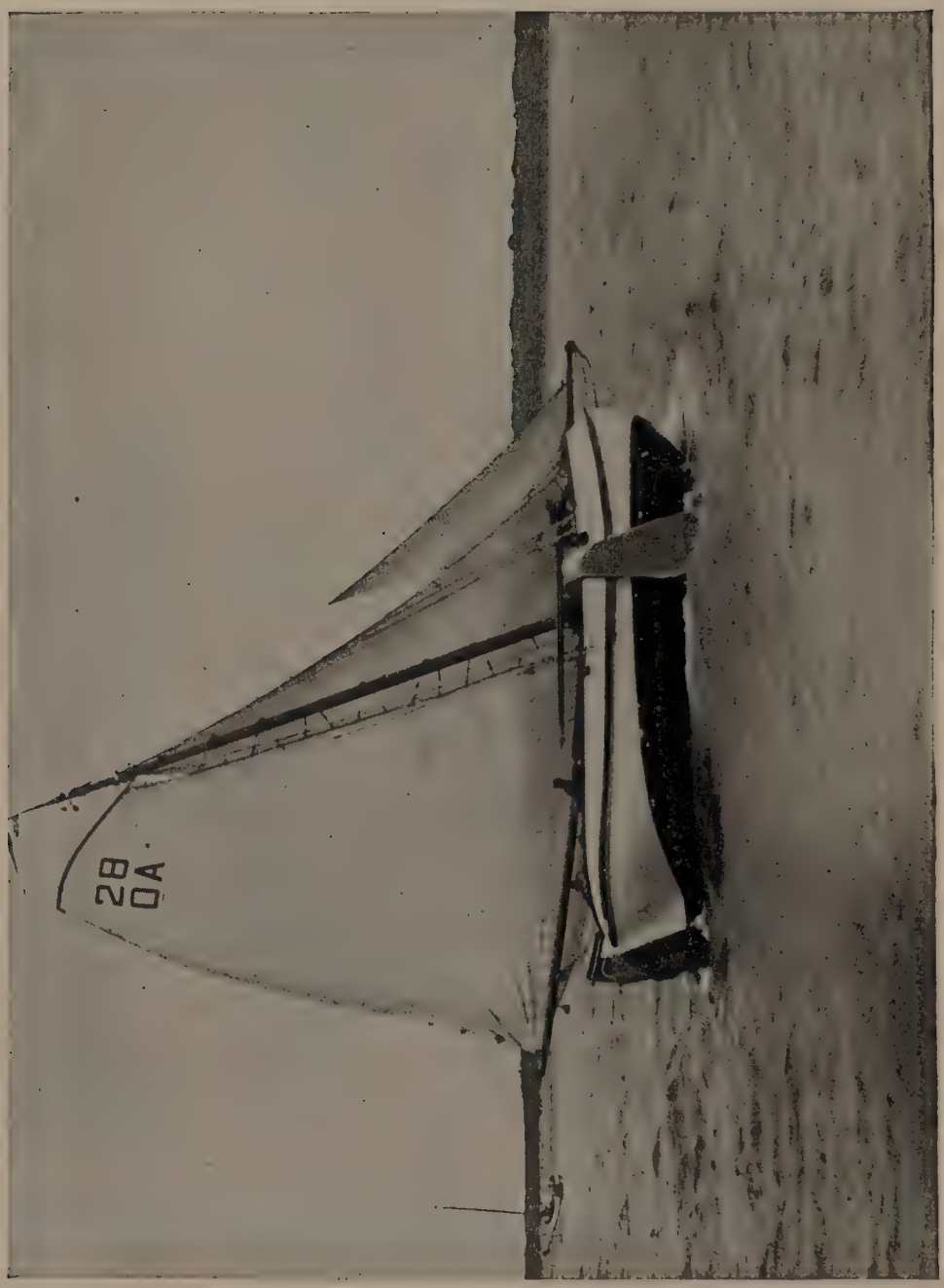
Panorama of the Port of Papeete

commerce and certainly few opportunities for the enjoyment of sport afloat. The Atlantic Coast is better off in the way of harbors, but aside from the cities mentioned there are no large centres of population.

Let us pass now to the other hemisphere. Europe leads all other continents in yachting interest, barring North America. Most of Europe is geographically ideal for the sport, if we think of the open-water cruiser as the main item of interest. Glance at the map of Europe and you will be struck by the immense area under water. This is particularly true of the northern and western

AN ENGLISH-BUILT YAWL NOW USED IN RIO DE JANEIRO

portions. All of the Scandinavian nations are bordered to a great extent by cruising waters. The Gulf of Bothnia extends northward from the Baltic to lave the coasts of Sweden and Finland. The little Esthonia, Latvia, and Lithuania countries are on one side of the Gulf of Finland and the Baltic, while Germany still has a great coast on the latter sea. Denmark is a maze of waterways which can be negotiated by the husky cruiser. Norway, of all the Scandinavias, is in the worst condition for yachting as most of her coast is exposed to the Sea of Greenland and cruising has to be limited to a great extent to her magnificent fiords. While a number of these sea arms extending up into the majestic mountains are large enough for extended trips, the voyages outside, from mouth to mouth, are apt to be extremely rough.



A Dutch Boeier
Note sail laced to mast. The windward leeboard is usually raised

A Group of German Sloops. R-43, in Foreground, was Designed by Gustave Estlander of Sweden and Built by Gebr. Engelbrecht of Berlin

Sweden and Denmark lead their section in yachting interest, but Finland—a rather mythical land to most people—has produced some of the finest yachts and the most skilled yachtsmen in the world. Eastward of the Baltic is the North Sea, famed in song, prose, and poetry as a body of water which may only be navigated by a staunch vessel. In spite of this reputation a great deal of the cruising of German, Scandinavian, Dutch, and English yachtsmen is done in the North Sea. The fact that voyages from one country to the next is possible adds a certain zest to the sport.

In Germany there are countless yacht clubs and the sport is gradually coming back to pre-war conditions, but the serious financial depression following the war resulted in a distinct trend towards the canoe instead of the larger yacht. There were two reasons for this course; the most important was the financial stringency, but a secondary cause was the rage for physical perfection which swept Germany and caused so much comment. As canoeing combines yachting with a considerable amount of physical exertion the youth of the German Republic turned to the smaller boat which he could paddle or sail at choice.

In former years the international regatta at Kiel was the greatest event in Europe, but that annual event ended with the war and it will be years before it again comes to its old glory, if ever. Kaag Week in Holland and Cowes Week in England are now the two star attractions for the racing yachtsman.

We cannot say whether yachting is considered with more seriousness here than it is in Europe or whether the European love of beauty prevents commerce from monopolizing the water fronts, but we do know that sailing centres are found nearer to the heart of the city in Europe than they are in America. The average American yachtsman thinks nothing of travelling an hour or more to get from office or home to his boat, but in Europe the yacht clubs are apt to be much closer to the commercial heart of the town. These remarks do not apply to Great Britain where the accessibility of yacht clubs seems to be the worst of all nations.

As mentioned previously we are going to pass very lightly over British and Dutch yachting because of the special articles devoted to them in other portions of this book, but we cannot

SOME OF HOLLAND'S ONE-DESIGN BOATS
Note split jib and roller reefing gear

go on to other nations without pausing to give credit to the yachtsman of the British Isles for his carrying on under the most adverse conditions. Shoal harbors with a high range of tide make it impossible for him to enter or leave many of the yachting ports except when the tide is just right. He adds to his sorrows by a distrust of gasoline engines to an extent where we believe we are not wrong in stating that there are more un-powered cruising yachts in Britain than in all the rest of the world. To an American a cabin boat without auxiliary power is almost unknown, yet the Englishman persists in keeping the helpful hand of power out of his boat and goes merrily along bucking strong tides or lying becalmed or aground for long, weary hours.

Most of the cruising boats of Holland are of the peculiar type mentioned elsewhere, but the Dutchman also knows how to build and handle the more conventional type of sloop and many one-design classes are found throughout the nation. As in the other nations of northern Europe, the majority of racing yachts in Holland are built to one of the several international classes like the 6-, 8-, and 12-metre divisions or else to the square metre classes where sail-area is the controlling factor.

France is not a yachting nation. In the first place, the French coast on the Atlantic is not suitable for the sport and there is hardly enough coast on the Mediterranean to foster any great amount of sailing. The little that is done is along the French Riviera and is enjoyed by more natives of other European nations who are resorting there than by native Frenchmen. Another small coastal section is on the English Channel and a little cruising is done from Havre and Calais. A rather pathetic attempt is made to race one-design boats on the Seine. Upon what we would hardly dignify by the name of river, little sloops shuttle back and forth, tacking every minute. The same may be said of certain sections of the Thames. We can think of no Americans who care enough for the sport to sail on streams as narrow. Our own Mississippi is wider than either the Seine or the Thames, but the use of a sailing boat is practically unknown throughout our entire Middle West other than the lakes.

If we cannot consider France as much of a yachting nation

Rotterdam During Race Week

what are we to do with Spain? What with Portugal? Spain has a few yachts on the Mediterranean, but these are used by but a few men of wealth and there is no really organized sport. At

FRENCH YACHT, CHAMAJA, ON THE MEDITERRANEAN

one time we understood that there was but one yacht on the entire Spanish coast bordering the Atlantic. A handful of yachts are found at Lisbon in Portugal and that ends it. Whether the trophy offered by the King of Spain for a trans-Atlantic race will spur yachting in Spain remains to be seen.

In Switzerland there is more yachting than one might think. Lake Geneva is a famous centre for sailing but cruising boats have nowhere to go, so they do not exist.

There is a lot of yachting interest in Italy and clubs at Rome are particularly active, with Venice also an established centre. It would seem that the iron rule of the present master of Italy would not tend to the promotion of anything as unproductive in worldly goods as yachting.

THE DUTCH LEMSTERYACHT ALCEDO

Russia and the Balkans complete the nations of Europe. Before the upset Russia had many yachts; fine cruising vessels and hundreds of racing craft. In time Sovietism will have arranged itself, so that yachting is again possible; but for the time being it is non-existent. In the Balkans there are plenty of suitable yachting locations but the disordered political life is not conducive to sport.

Roughly speaking there is no yachting in Asia nor in Africa. In Shanghai, Hong Kong, and a few other spots where Europeans and Americans gather for commercial reasons we find yachts,

almost all of the racing type and used, less for the satisfaction of the sport itself than as a means of doing the right thing according to the dictates of the social colony. There is quite a bit of yachting in India, all of it indulged in by English inhabitants. If there is such a thing as a native Chinese or Japanese yacht we have never heard of it.

The British, Dutch, and French colonial possessions in Africa all have their share of yachting. Cape Town and Durban are two of the best known locations. We were rather surprised not so long ago to have a call from a gentleman who maintained a fine gasoline yacht at Dar-es-Salaam and cruised regularly to Madagascar. To those who think that section of Africa is inhabited only by man-eating tigers and naked savages we might add that the gentleman in question bought an electric icebox for his yacht while in America.

Australia, New Zealand, and the scattered islands of Australasia complete our résumé of foreign yachting. In no section of the world is yachting considered more seriously or practiced more skillfully than in Australia and New Zealand. Wonderful harbors welcome the cruiser at the end of his day's voyage along mountainous coasts. Teeming ports and wilderness sanctuaries are accessible to the owner of an able yacht. In the harbors the racing of small, open boats is carried to a greater extreme than anywhere else. In harbors like that at Sydney the man on the street takes an interest in sailing and the big regattas for the typical over-rigged sailing dinghies are almost civic holidays.

In the islands of the Pacific there is considerable activity in sailing although indications point to a more rapid trend towards the power boat, particularly the craft of considerable speed. It might seem strange that a type of boat which soon eats up its own weight in gasoline would not be satisfactory in a land where every bit of oil is shipped in at considerable expense, but it is possible that the rather easy-going life of a tropical colony is distasteful to many and they turn to a sport which gives then an intense thrill for a short time.

To say that we have much to learn from the yachtsmen abroad is but the simple truth. In many respects they are ahead of us.

Items like roller-reefing gears, loose-footed sails and leeboards are all foreign ideas to save labor and space which have not been adopted in the United States. On the other hand, we have electric lights for most of our cabin boats, self-starters for our engines, and many other items of equipment which they have not accepted as yet. It will be noted that the points where we excel

Photo by Yachting Monthly

SOME OF THE MODERN BOATS AT GENOA

are along mechanical lines, while they lead us in items of rigging and certain points of hull construction. Aside from the minor differences in our boats, forgetting variations in language, background, and geographical aspects, the yachtsmen of the world form an unofficial association, a brotherhood of the out-of-doors, which is leading us surely, if slowly, to a better understanding all around and the millennium which we hope for is not so impossible after all.

EDITOR'S NOTE.—What vast things are encompassed in the title "Yachting Abroad" and what a fund of information could be gathered in reference to it! Mr. White has briefly, but well, covered the subject. When we Americans travel in foreign countries, it is seldom we have time to do more than see a few pictures, examine superficially the exterior of some scattered buildings and the interior of a few cafés, accompanied by the pleasure of tasting rare vintages. While travelling from Berlin to Potsdam we see beautiful modern yachts from the car window. At Antwerp there are more boats of all kinds assembled in the smallest space it is possible to moor them, than anywhere else in the world. At Bruges our attention is called to the lines of graceful little craft anchored and tucked away in the back yards or water alleys of that delightful little city. Zeebrugge on the North Sea is a place, where, if you are interested in sailing, you could spend years wandering along the water front imagining the history and romance of the modern and deserted hulls. The south of France, Genoa, Naples, and Venice all thrill you with the many types of boats and sails they present for your inspection and sometimes admiration. It is not unusual for a traveller while sitting on a bench near the Doges' Palace at Venice, dreaming about the long ago, to be suddenly awakened to a realization that he is living in modern times, when he hears the swash of water and sees an up-to-date 6-metre boat flash by. Wherever there is civilization, you will find that the art of sailing has followed the flag. Then, tired and weary when you board the Majestic at Southampton you are revived and regaled by the many evidences of sailing boats, the Solent, of course, being the scene of yachting's greatest development.

VENICE—A MODERN BOAT WITH AN ANCIENT BACKGROUND

CRUISING IN BRITISH WATERS

By Maurice Griffiths

FOR anyone who wants variety in cruising grounds, it will take him a long time to exhaust the British Isles. And then he can begin all over again, if age will let him, and see a lot more.

The Solent is sometimes looked upon as the "centre of yachting" but there are plenty of other recognized "cruising grounds" around these Isles which are suitable for yachts, amongst them being:—the southwest coast from the Isle of Wight to Land's End, including the whole of the English Channel; the northwest coast of England, including the Isle of Anglesey and the River Mersey; the east coast of Ireland; the beautiful Clyde and Scottish lochs; and the Thames Estuary on the English cruising grounds, that is, for yachtsmen who own seagoing boats. There is also a good deal of cruising done in the Huber district on the N. E. coast, but sand banks, furious tides, and a particularly bleak and dangerous coast are some of the deterrents. Finally, there is that expanse of inland waterways and meres called the Norfolk Broads, in which the young learn to sail and the aged go for peace.

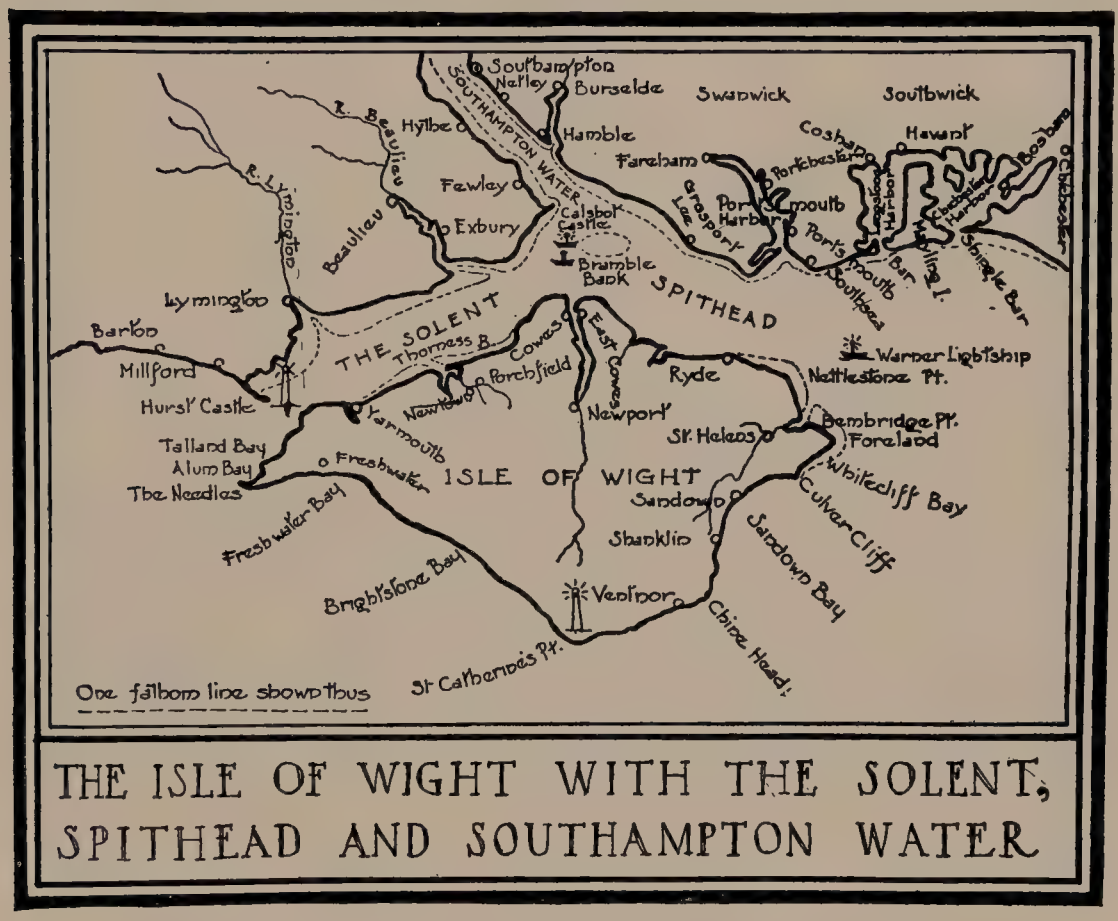
Because an English monarch tried Cowes, in the Isle of Wight, as a health resort at a time when such things had not yet been invented and no one went to the "seaside", that minute town has grown in social importance until raging journalists of the "late extra edition" kind have called it the "Mecca of yachtsmen". Yet, strangely enough, all the cruising yachtsmen I have met there seem to be doing their best to scurry away from it and its exposed tide-swept, uncomfortable anchorage! But yachtsmen, as a class, are uncertain creatures. Because of the awe with which society treats Cowes Week, the Solent, that strip of water at the head of which Cowes stands, has been lavishly termed the "yachtsman's paradise".

A narrow piece of water, well sheltered behind the Isle of Wight, it is seldom troubled by anything worse than what is called a "Solent chop", which is caused by a fresh S.W. breeze blowing against a 3-knot ebb, and yachtsmen who like sailing about in boats without going too far from land and without the danger of running on to annoying sand banks or mud spits, love the Solent. There are several anchorages on the north shore and on the island, although these all seem to be difficult places to get into. Beaulieu River, delightfully wooded and running up into part of the New Forest, has a nasty bar at its mouth and a narrow entrance; Hamble is so crowded with yachts and power boats that you can scarcely manœuvre at all; Southampton Water teems with shipping and oil; Lymington is extremely tortuous and narrow and the paddle steamers come in and out and worry you incessantly; on the island, Yarmouth is a little harbor in which you have to tie up to posts or alongside other boats; Newtown is a sweet little creek with a very difficult entrance; Fishbourne is hardly roomy enough to turn in, and it almost dries out above the place where the motor ferries come and go every hour; Ryde is a horribly exposed anchorage in anything but southerly winds and Bembridge has one foot over its bar at low water. This brings us to Spithead, the other strip of water on the east side of Cowes. On its north shore there are Chichester Harbor, Porchester Lake, and Langstone Harbor, all three wide stretches of water that dry to narrow channels and wastes of

THE FIRTH OF CLYDE and SCOTTISH LOCHS
with part of the
NORTH-EAST COAST OF IRELAND

mud flats at low water, but all the same, fascinating cruising grounds for small, handy, shallow-draught boats. Such, then, is the Solent and its neighboring waters—the "yachtsman's paradise".

But there is only one sand bank in the whole of the Solent and Spithead on which a small yacht can ground off shore, and



THE ISLE OF WIGHT WITH THE SOLENT, SPITHEAD AND SOUTHAMPTON WATER

Probably the most fashionable sailing waters in the world

that is The Bramble at the mouth of Southampton Water. Thus one is afforded some 20 miles of clear sailing in waters sheltered from the prevailing S. W. winds by a hilly and picturesque island, whilst several anchorages are within an hour's sail, even if none of them is perfect.

But there are other and *better* cruising grounds round Great Britain which are more attractive and decidedly more satisfying to the genuine "cruising amateur seaman"—a term, by the way,

which describes his breed far better than that much abused word "yachtsman". Going west from the Solent, the whole coast line of the English South Coast is a glorious open water ground for competent seamen, and as you work farther west the harbors become better and more beautiful. True, this coastal work demands a good boat and knowledge of practical seamanship, but there are few places better for honest cruising in a small yacht than the English Channel. It is neither too "soft", nor too hard and dangerous, unless a man plays the fool with his boat and the tides. It would require an artist to describe the beauty of entering the mouth of the River Dart, in Devon, as dusk is falling. Rocky hills on each side, well wooded, with grottoes and caverns, twinkling lights from lonely houses set in the trees and an old, ogre-like castle on the port hand, standing grimly * * * then the beauty of the river above the anchorage to Totnes preserves the illusion that one is in fairyland. The rivers along the Cornish coast with their rocky entrances are famed for their beauty, and many say that the Cornish coast is the finest cruising ground of all. There is always plenty of water and a draught of 8 feet is no inconvenience.

The mouth of the Mersey is beset with sand banks and the yachting in that district is decidedly of the "strenuous" kind. In the channels there is plenty of water and draught is not a serious handicap. Fogs, hard gales from S.W. to N.W. and a four-knot tide have to be contended with, but with a healthy seagoing cruiser the cruising on the Anglesey and North Wales coast is very fine.

Ireland presents a rocky but fascinating coast with numberless inlets. From Bantry Bay in the S.W. corner right up to Larne on the N.E. coast, there are fascinating places to visit in a boat that, if need be, can stay at sea in bad weather; Cork Harbor, Waterford, Dublin Bay, Strangford Lough, and Belfast Lough are all intriguing deep-water cruising grounds for small or large yachts, but to explore them all would occupy the whole of a season.

The Firth of Clyde is held by the Scotch, with characteristic fervor, to be the ideal cruising ground in the world. But I have

heard Southerners say it also, and perhaps they are right. The grandeur of the scenery of these Scottish lochs and islands, the Kyles of Bute, the Sound of Jura, and the Firth of Lorne, with their wild and windswept beauty, is hard to describe. Perhaps it may be said that this cruising ground gives one scenery that takes one's breath away, endless good anchorages, plenty of water and fine sailing, yet tricky navigation if one wants it. True,

A Typical Old English Cutter

Designed by Payne, a noted English designer, and built as long ago as 1860, she is still afloat and cruising! Length overall 40 ft.; beam 10 ft.; draught 6 ft., 6 in.

it has a heavy rainfall, and mists come down from the mountains, and it is squally in places. But, is not yacht cruising a man's game?

Right across England to the other side we come to the shallow North Sea with the coasts of Belgium, Holland, Germany, and Denmark opposite. Here, on this sand-infested coast, between Orfordness and the North Foreland is the most "sporty" cruising done in small yachts. This triangular piece of water is called the Thames Estuary and a glance at the accompanying map will show that it is riddled with sand banks and flats, spits and

swatchways, that dry right out at low water or are barely awash. But the land is intersected with rivers and creeks, and the county of Essex alone is made up of no less than thirty-nine islands! Most of these are flat, dreary places bounded by sedge-covered sea walls and occupied by one or perhaps two homesteads and a few cows. But in the neighboring county of Suffolk there are hills and woods, and the River Orwell compares with some of the west country rivers for beauty. Both Orford Haven and Woodbridge Haven (see accompanying map) are mouths of rivers with constantly changing shingle bars where pilots both in and out are a necessity.

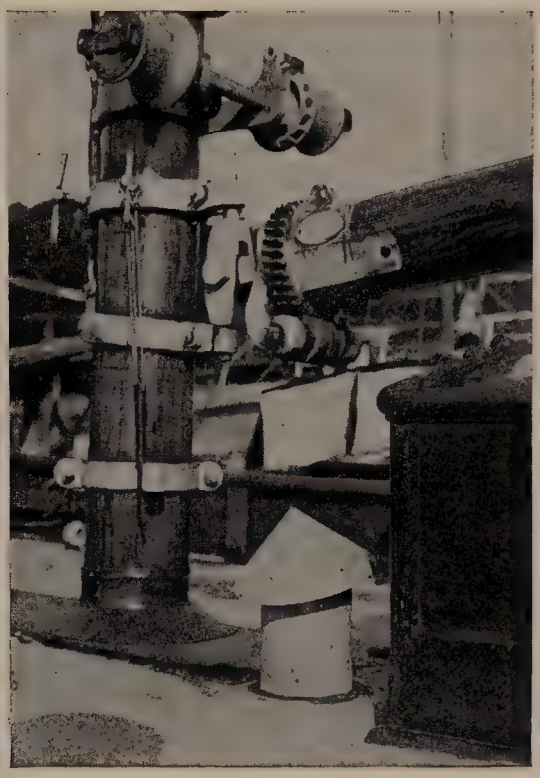
On this coast it was that the Vikings landed, pillaged and built camps a thousand years ago. They left their influence. Little wonder that the Thames Estuary yachtsman, with his little, shallow-draught boat, is a hardy Corinthian on the whole. Navigation is intricate, for the tides are all important with a rise and fall of some 10 feet at neaps and 15 feet at springs, and a boat that draws an inch over 5 feet is a sore trial. But there are good anchorages almost everywhere, especially in the prevailing S.W. winds, and cruising in these waters holds a great attraction for those yachtsmen who do not lose their heads if they accidentally run aground.

Beyond the fact that the Norfolk Broads are very like the Frisian Meers, that smooth, shallow fresh-water lakes, rushes, flat meadowland scenery and windmills are the chief characteristics, and that the "yachting" carried on there is of the gentle, "tie-up at night" kind suitable for novices or the very aged, nothing need be said. They are hardly a seaman's cruising ground.

With such a variety of cruising grounds it is not surprising to find that several distinct types of cruising yacht have gradually evolved under the conditions prevailing in each district. These, of course, have naturally been influenced by the local fishing craft. For example, the kind of boat that is most favored on the southwest coast, where there is unlimited water, is quite unsuitable for the Thames Estuary, with its narrow spitways, sands, and shoal water.

There is, however, a universal type which is to be found at every yachting centre round the British Isles, a type so very English that one instinctively associates it with bulldogs and roast beef. If the simile is involved, let it pass. I refer to the typical cutter with a straight stem, a somewhat long counter

Midrib section of Baroque, built by Hambly, at Cardiff, 1902. Length overall, 50 ft.; beam, 13.5 ft.; draught, 8.6 ft.; depth, 7.6 ft. All ballast inside.



The worm reefing (roller) gear on a Bristol Ch. P. cutter's boom. By this means reefs were rolled down in the mainsail by one man only.

BRISTOL CHANNEL PILOT CUTTER

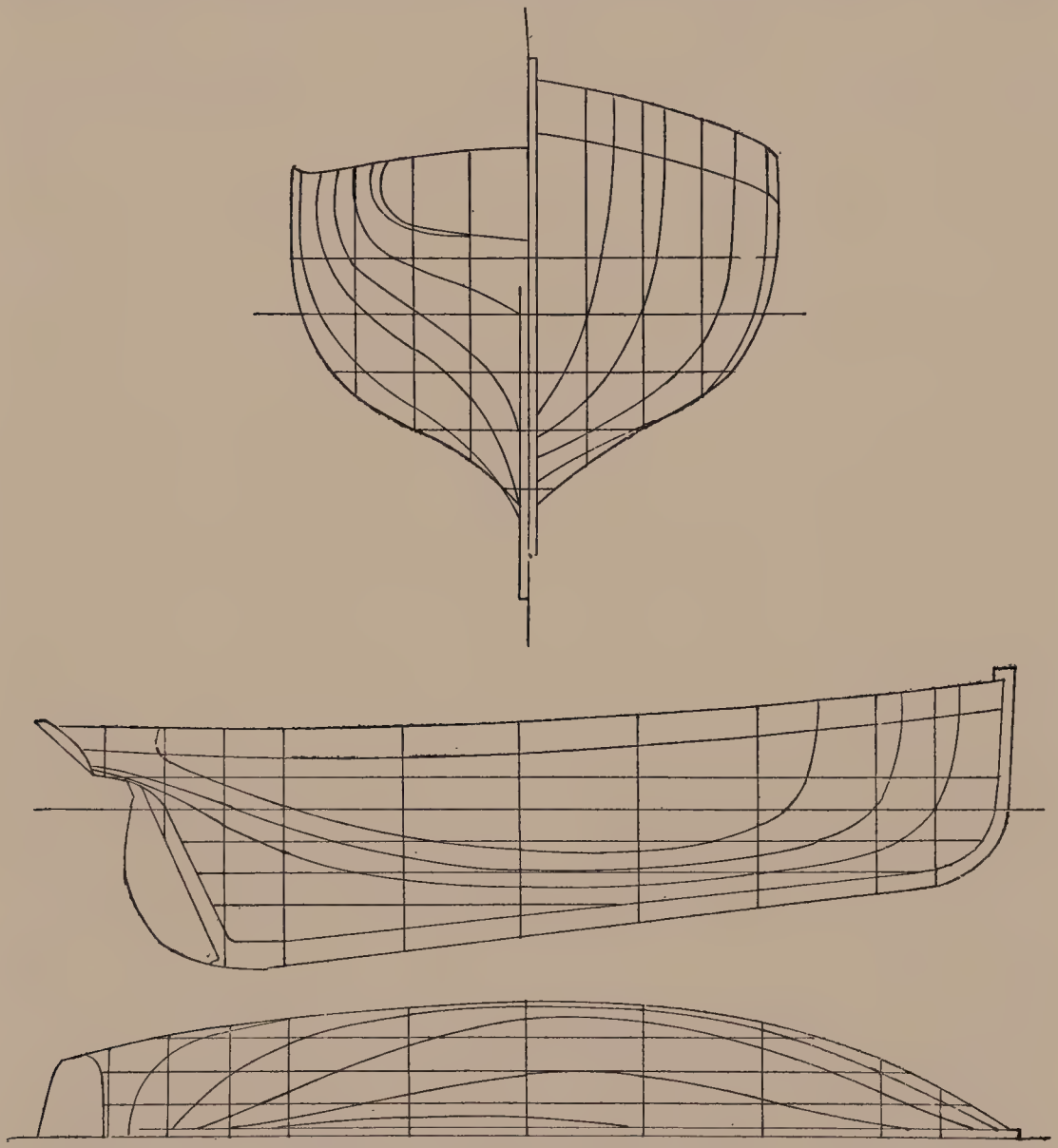
stern with "open" taffrail, mast stepped well back from the stem into the boat, a long bowsprit which can be "reefed," a separate topmast that can be "housed" in bad weather, and somewhat high bulwarks. She is a type that was almost universal in these waters from the '40's of the last century until the more modern craft with rounded or spoon bows made their appearance in the

'90's. A good, healthy type with deep draught generally, able to ride out any weather comfortably, faster than she looked, but, with her long straight keel, slow in stays. As a cruising yacht the old type of straight-stemmed cutter, heavily built of English oak, is hard to beat, for she lasts for several decades and it is significant that nearly all pilot cutters closely follow her lines. Perhaps one of the facts that might arrest, say, an American yachtsman cruising in British waters is the age of some of the yachts. Many yachts to be met with were launched in the '80's and '70's and there are a few even older than this. Indeed, in England, a *cruising* yacht is not spoken of as "old" until she has attained an age of 25 or 30 years!

This brings me to mention a product of the Bristol Channel, a stormy stretch of water that lies open to all the fury of the Atlantic Ocean and the prevailing S.W. gales. At one time there was a flourishing pilot service composed of sailing vessels, specially built for the purpose, whose duty it was to sail out and cruise 50 to 100 miles off Land's End and Cape Clear to put pilots aboard incoming ships. These vessels, all sailing cutters of from 20 to 40 tons (say 40 to 60 feet overall), never had more than three men aboard, and on occasion, when two ships were met with requiring a pilot each, the remaining man would take his cutter back home *single-handed!* For this reason these magnificent boats had carefully designed gear for ease of handling and their main booms were all fitted with worm roller reefing gear, which is illustrated herewith, so that reefs could be taken in quickly. They were also designed for their main purpose, that is, to be able to lie hove-to comfortably for a week or two at a time off shore yet be able to race towards any ship flying the pilot's jack, in any weather. Of the difficulties of putting the pilot aboard the steamer in a December gale and of the method by which one man used to *gybe* his punt aboard by means of the boom before running for home, I could tell many stories. But they cannot be here.

When steam pilot vessels ousted these cutters for the service many of them were bought and converted into yachts. Clean lined, speedy yet essentially weatherly craft, they make fine cruising yachts, and the lines of one of them, published here,

can be studied. These boats are little removed from the old English type cutter which I described above, except that they rarely carried any ballast at all on the keel, the whole of it being



Bristol Channel Pilot Cutters

stowed beneath the floorboards and "winged out" in the bilges to give them an easy motion at sea.

Closely allied to the Bristol Channel Pilot Cutter is the Fal-

mouth Quay Punt, which is one of the most popular types of small cruising yacht on the English south coast. Originated from a species of half-decked boat that used to act as tender between Falmouth Quay and the ships that would lie outside, these "punts" are short, beamy, deep, heavy displacement yachts with straight stems, plumb transom sterns and high freeboard, and their rig always consists of a jib, forestaysail, loose-footed mainsail, and triangular mizzen. They are almost invariably either 28, 30, or 32 feet overall, the same length on the waterline, 9 to 10 feet beam and 6 feet draught. With their high freeboard they have fine headroom below and, indeed, their accommodation is greater than any other boat of their length. You will find specimens of the Falmouth Quay Punt all over Britain, but chiefly on the south coast, where there is plenty of water.

The Clyde and the Scottish lochs have produced their own type of yacht for cruising, closely following the local fishing type, of course. This is the Loch Fyne type and it has several characteristics, the chief being that the stern is pointed rather like the bow, only fuller, and the sternpost is raked at an angle of some 30 degrees. This is to make the vessel safe when running before a really heavy sea such as can be encountered in the North Irish Channel. The stem is straight, the forefoot generally being deep and square, the bowsprit is usually of the reefing variety, and the rig is almost invariably ketch. With high bulwarks, good freeboard and deep draught, these boats are fine, safe vessels at sea and are to be found in large numbers in the Clyde district.

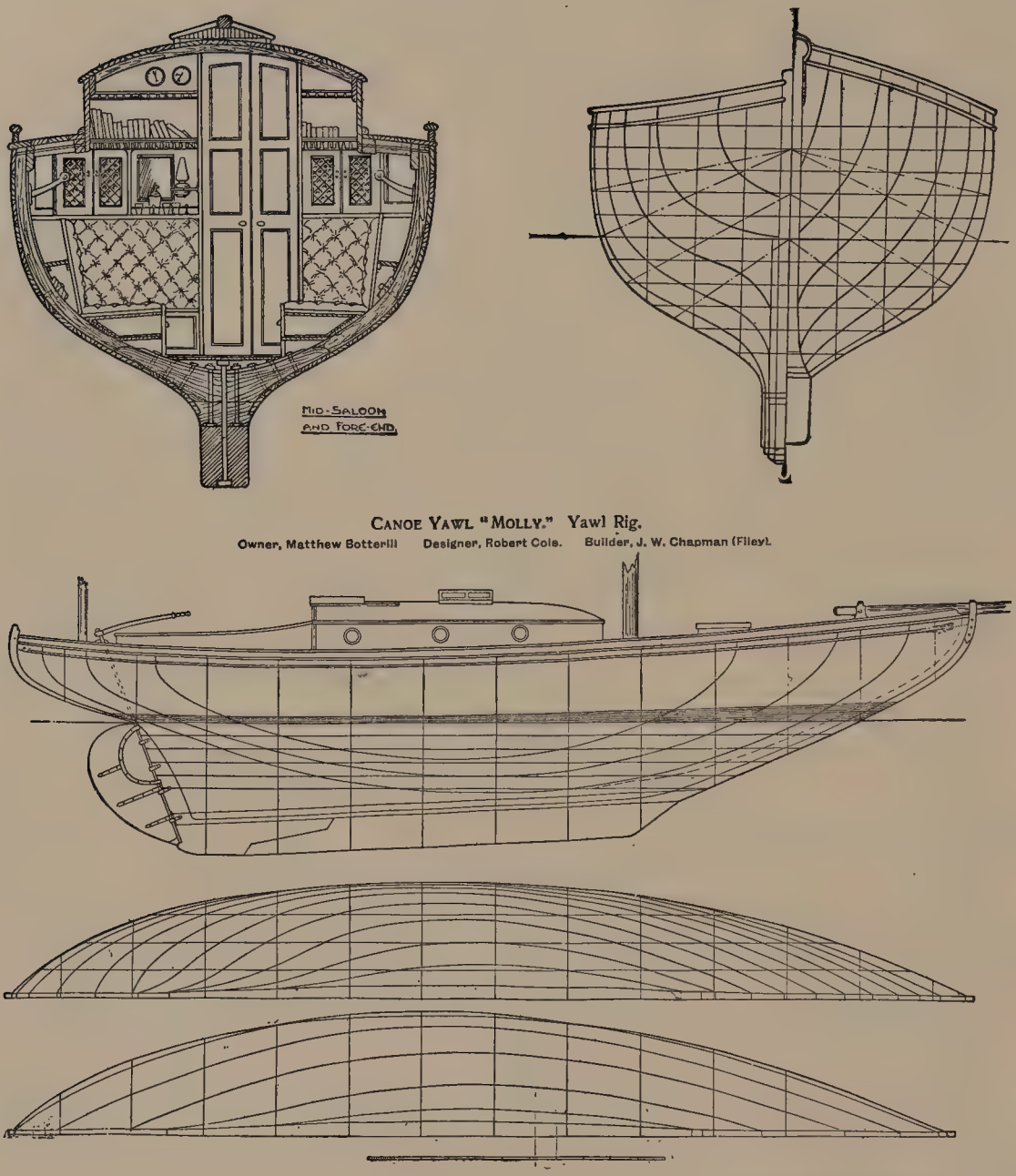
A quite different type of small cruiser which has definite English characteristics and is very popular with yachtsmen is the "canoe yawl". This type of cruiser was originated, I believe, by the late Albert Strange who designed numbers of them. Whether the canoe stern is, or can be, beautiful or not is merely a matter of opinion, but its efficiency in a seaway, provided it is properly designed, is undeniable. The "canoe yawl" is essentially a modern type and has almost invariably a spoon bow or at least a rounded stem. The stern ends very much like that of a canoe and the rig consists of either a single foresail, set on a wood roller, or a jib and forestaysail, mainsail, and mizzen. The lines of a typical

canoe yawl, reproduced here, show that this type of yacht can be not only fast, weatherly, and efficient, but also good looking. In size these canoe yawls vary from 20 feet L. O. A. by 6 feet beam up to 30 feet L. O. A. by about 10 feet beam.

The last type of small yacht to be described here, which is peculiar to British waters, is the natural outcome of local conditions obtaining in the Thames Estuary and it is rare to find her anywhere else but on the east coast. I have already explained that this triangular stretch of water is riddled with creeks and sands, and because at low water these dry out leaving narrow channels with anything from 4 to perhaps 12 feet of water in them, a vessel that would be as comfortable while sitting on the sands as afloat is naturally a great advantage.

These conditions have evolved, during the past two centuries, a peculiarly local kind of trading vessel, called the Thames sprit-sail barge, whose general design has been copied for yachts. These Thames barges are worthy of mention here, since the "barge yacht", which is to be seen in large numbers in the Essex and Suffolk creeks, is merely a plagiarism. Entirely suitable for these sand-infested waters, these barges are comparatively large craft, measuring usually 85 feet by 18 feet beam, yet with their flat bottoms they float in 2 feet, 6 inches of water when light and 6 feet when loaded with 120 tons of cargo. Their leeboards, which are used in order to give these handy, fast vessels a "grip of the water" when turning to windward, increase the draught by a further 7 feet when lowered. Yet these big vessels are handled entirely by two men—frequently by the owner and his wife,—and you will find them threading their way up narrow creeks far into the country, or again in almost any North Sea or Channel port from Scotland round to Land's End. In the Thames itself they are to be seen in countless hundreds, still holding their own against the competition of motor and steam.

With vessels that, like the Dutch craft, have reached human perfection and have hardly changed in the last 70 years, it is small wonder that yachts have been built on the same principle for use in these shallow waters. The average small "barge yacht" differs, of course, from her commercial prototype in many details.



CANOE YAWL "MOLLY." Yawl Rig.

Owner, Matthew Botterill Designer, Robert Cole. Builder, J. W. Chapman (Filey).

Sail area Yawl Rig, 700 sq. feet.
Tonnage, T.M. 9 4/10 tons.
Headroom in Cabin, 6 feet.

Drawings, Courtesy of The Humber Yawl Club Year Book

LINES—CANOE YAWL, MOLLY

Designed by Robert Cole, and mentioned in the paper on English Cruising. Length overall, 36 ft.; length load waterline, 27 ft.; extreme beam, 8.8 ft.; draft, 5 ft.

She has, it is true, a flat bottom a midships with hard "chines" running up at each end into a normal bow and stern, and she has leeboards to minimize leeway, but there the similarity ends.

As a rule the smallest barge yachts measure 22 to say 36 feet overall with a beam of one-third to one-quarter their length. With leeboards hauled up they draw from 9 to 18 inches of water. Sloop rig is the most popular, with a foresail set on a wood roller on the stem head and roller reefing (rather like the reefing gear of the Bristol Channel pilot cutters, but with a handle and ratchet instead of worm gear) on the main boom. This type of boat, having little if any inside ballast, no keel, and relying entirely on initial stability, must have easy and quick reefing tackle, for you cannot "drive" them as you can a keel boat. In the larger sizes the spritsail barge is followed more closely, whilst several yachts are actually converted Thames barges, retaining all the fascinating and efficient characteristics including the large fore-staysail working on a "horse", the mainsail set on a sprit (usually a fine 60 foot Oregon pine spar), the square-headed topsail and the small mizzen stepped right aft. A yacht which has the accommodation of an 80 foot by 18 foot barge, which can cheat the tide over miles of sand with 3 feet of water over them, which can ride out a gale in comfort under the lee of a sand bank or even upright on the mud, and yet can be handled entirely by the owner and one paid hand is unique and a wonderful acquisition. The converted Thames barge is the only seagoing vessel that is able to supply all these requirements.

Thus it is that as one cruises all round Britain, visiting one yachting centre after another, it is noticeable that, although there may be numbers of the orthodox type of racing or deep keel cruising yachts, there is a particular type of yacht at each place which is peculiar to it and has grown naturally out of the local conditions.

Editor's Note.—Mr. Maurice Griffiths, who wrote this paper, and who was on board the Saoirse in the 1927 race, commenced sailing at the age of seventeen when, with money which he had saved up for years for the purpose, he bought a half share in a

50-year-old 30-foot cutter. This boat was found to be quite unsound, and, as her bottom showed a tendency to drop out at inconvenient moments, Mr. Griffiths and his partner sold her. His next boat was a small 18-foot cabin sloop in which he sailed single-handed about the Essex coast between the River Thames and Woodbridge Haven, nearly losing her on more than one of the many sand banks and shingle bars that abound in that neighborhood.

Having sold this boat at a small profit, Mr. Griffiths bought a 22-foot centreboard racing sloop which, as he says, "all but drowned him". About this time he commenced a yacht agency in Ipswich, where he was then living, and for four years bought and sold all kinds of small yachts and boats for clients, while at the same time he owned several different cabin boats of divers types himself.

In 1924 he gave up the agency business in Ipswich and moved to London, where he took up various journalistic duties which prevented him from taking more than occasional week-ends off for sailing on the East Coast or the Solent. During this time he underwent the usual unfortunate experiences of the free-lance journalist, and it was only by contributing to the yachting papers that he was able to "keep the wolf from the door". His writings, including his little book *Yachting on a Small Income*, which was published by Hutchinson, attracted the attention of the *Yachting Monthly*, and he was offered the editorial chair of that magazine, a post which he now holds. Yachting and journalism have, therefore, held alternate supremacy, and Mr. Griffiths says that he is never quite sure whether he is a yachtsman or a journalist.

He is never without some kind of cruising yacht, and he is generally to be found cruising on the East Coast all the year round—even if it is with a different yacht almost every year.

This paper by Mr. Griffiths, so full of surprises for American yachtsmen, will acquaint them with the nature of English cruising waters, besides giving a better understanding of why the boats are of such sturdy design and build. Comparison between English and American cruising is impossible; what could we do without our magnificent bodies of water, such as Long Island

Sound, Delaware Bay, the Chesapeake, Barnegat, and the Great Lakes? Nowhere in the world may yachtsmen boast of finer conditions given them by nature, to sail on water, protected by land from the rigors of the ocean. England does not present these same opportunities, but despite this handicap, or because of it, the Englishmen were the first—with the possible exception of the Dutch—to realize what sport there was to be gotten out of sailing, and to develop design and construction of pleasure craft. Their three centuries, or more, of experience and initiative with yachts, together with their geographical location and love for adventure, gives the present-day English sailor just reason to be proud of his inheritance. The Anglo-Saxon race from time immemorial not only needed sea transportation, but in addition found conquests and discoveries by water very much to their liking. The sailing, racing, and cruising of present-day English yachtsmen is just as significant and representative of the British love for the sea, irrespective of what period we care to consider.

THE MAJOR YACHTS

By Bennett Fisher

THE New York Yacht Club, founded in 1844, is the oldest American yachting organization, and it has always maintained its present position as the most important single club in the country. It is natural, therefore, that the finest yachts on the coast have almost invariably been in its fleet and have taken part in its Cruise. So great is the reputation of this club that the winners in its races have been looked upon as the outstanding boats in their respective classes. Other clubs, however, notably the Eastern, hold important regattas for the big boats each season, but the entrants are practically the same.

During the Great War there was no Annual Cruise, and it was predicted that the day of the large yacht was passing. This has not been proved the case, because the cruises of recent years have been very successful. The change has been in the spirit of the sport; cruising qualities receive greater attention, and schooners take precedence over sloops. The fleet that goes east now is composed chiefly of wholesome two-stickers that require comparatively small crews. Refinements in sail plan have made possible this advance, and there is little doubt that the modern staysail schooner is faster than the full-rigged cutter of fifteen years ago, with her clumsy club topsail and complicated gear.

When racing was resumed after the War the fleet was small,

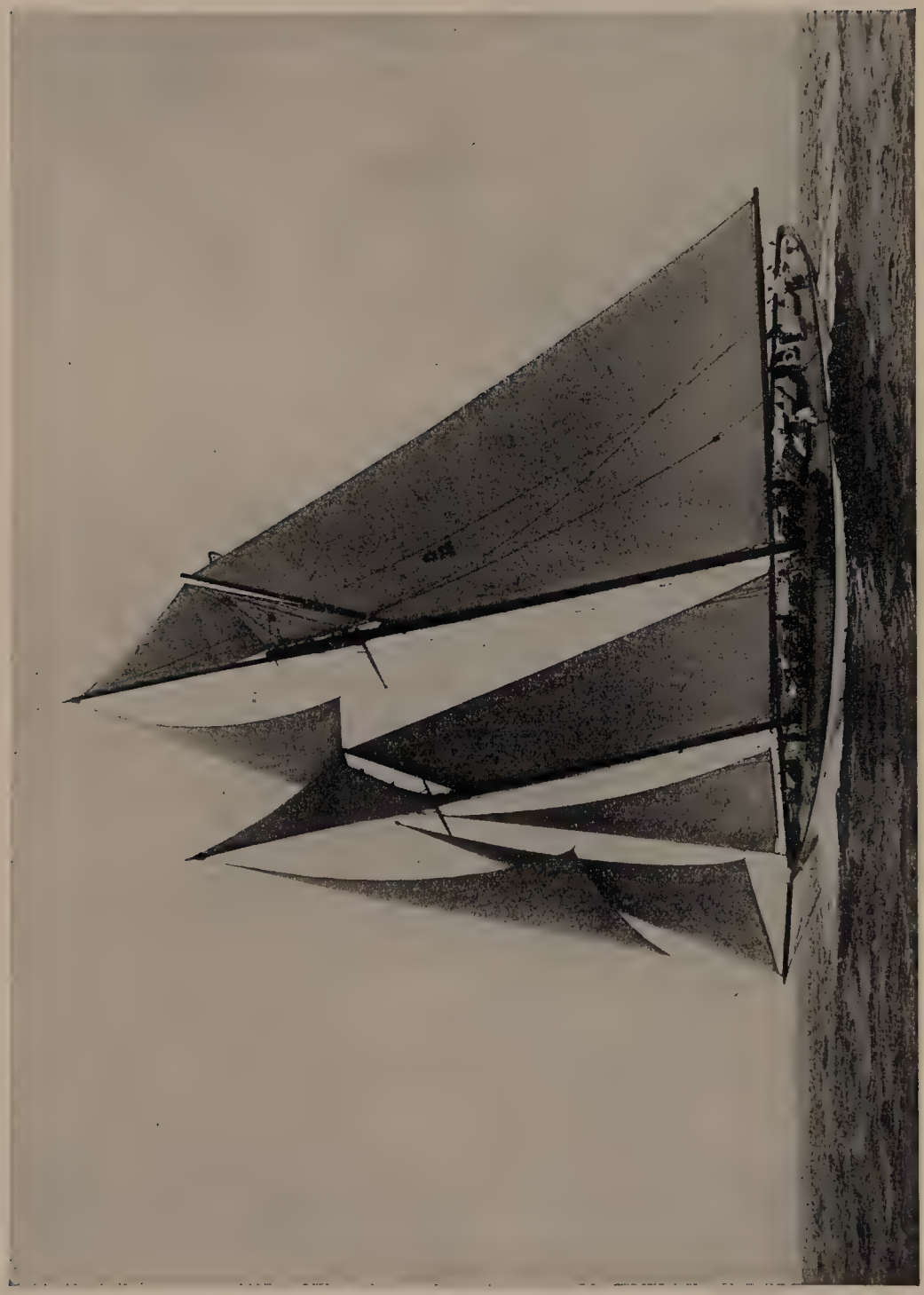


Photo by Levick

(Fig. 2A) Vagrant

but the schooners were of the first rank and very well handled, the most conspicuous being the Vagrant (Fig. 2A), owned by Harold S. Vanderbilt, Commodore of the club from 1922 to 1924. He sailed her almost faultlessly, and was successful in winning both the Astor and King's Cups two years, an achievement that had never before been equalled. Almost a sister ship to this 109-foot Herreshoff schooner is Carll Tucker's Ohonkara, which took part in a number of races. The Marriette of Boston completes a trio of combined racing and cruising yachts that would be hard to improve upon for accommodations and seaworthy qualities. Besides these there were the big Sonnica, Princess, Irolita, and others.

The short high-sided Queen Mab (Fig. 2B) played an important part in the squadron runs, because her low rating of 46 gave her a liberal handicap, and she never lacked competent handling. Her owner, Nathanial F. Ayer, had the foresight to put a jib-headed mainsail on her, and thus started the fashion that is so common among two-stickers today. While Mr. Ayer owned her, she won the Vanderbilt Cup in an ocean race and also the Puritan Cup, the most important trophy regularly competed for east of Newport. The fact that the handicaps are not quite sufficient to make up for the actual difference in speed adds to the significance of the long list of wins that Queen Mab has to her credit.

In 1923, Charles L. Harding, of Boston, commissioned the Herreshoff plant to build a 68-foot waterline racer. This new schooner from Bristol, named Wildfire (Fig. 2B), was the first to be built for a jib-headed mainsail. She was a roomy boat, and her success is shown by her winning of the Astor Cup for schooners. The King's Cup winner that year was the Enchantress (Fig. 2B) owned by C. Oliver Iselin, who has had a great deal to do with keeping the America's Cup in this country. The late A. Cary Smith, the master of the schooner rig, designed this 136-footer in 1911. Before being cut down and sold to the Pacific Coast she was the largest yacht without power.

The Vagrant repeated her 1922 performance in 1924 and captured both the major cups, in spite of the close competition.

Photo by Rosenfeld

START OF THE ASTOR CUP RACE, 1923

(FIG. 2B) Left to right—Wildfire, Queen Mab, Enchantress, Sonnica, and Irolita

THE GREAT YACHTS—VANITIE AND RESOLUTE, RIGGED AS SCHOONERS

William Gardner, who was long Herreshoff's chief rival, was well represented by Flying Cloud (Fig. 3A), a beautiful craft which won the Astor Cup the next year. E. Walter Clarke, of Philadelphia, raced the Irolita, formerly a sloop of class K.

No deliberate attempt since 1914 had been made to build to the limit of the Universal Rule; so a great deal of interest was aroused when John S. Lawrence, of Boston, ordered a large schooner to be built to W. Starling Burgess' design. The well-known Advance (Fig. 3B) was constructed by Anker and Jensen in Norway, and arrived in this country, after a forty-eight day crossing, just before the Eastern Yacht Club cruise in July, 1925. She immediately attracted great attention, partly because her hull was the result of knowledge gained from racers in the small Universal Rule classes, but more because of her rig between the masts. The faults of the gaff foresail and its topsail had been recognized for some time, but it was Burgess who discarded it entirely and set what amounts to a large jib below, and an over-sized "Queen staysail" above. Originally it was planned to fill the larger part of the intervening space with sails hoisted on tracks on the foremast, but this proved impractical. Between the Eastern and the New York Yacht Club Cruises a new sail was devised to take care of the waste space. This rig, which is well illustrated in Figure 3B, has been variously described, but in spite of its odd appearance it is fundamentally a refined fisherman's staysail rigged so that it need not be lowered when the boat tacks.

Mr. Burgess and Mr. Lawrence in this way started the staysail rig so much talked of since. The last thing they added was the "sky staysail" to fill the triangle above the quadrangular staysail. Many have copied this rig, incorporating their own ideas, and 1926 saw a strange medley of sails between the masts of the schooners.

The reappearance of the two America's Cup candidates, Herreshoff's successful Resolute (Fig. 3B) and Gardner's handsome sloop Vanitie excited popular interest in the 1926 racing. These 75-foot waterline sloops built in 1914 were bought by E. Walter Clarke, owner of the Irolita, and Robert E. Tod, owner of the Katouras, and completely refitted for cruising. Mr. Tod sold

(Fig. 3a) Flying Cloud

Photo by Rosenfeld

Photo by Levick

(Fig. 3b) Resolute, Advance and Wildfire

his yacht to Mr. Harry Payne Whitney before she left City Island. Their new schooner rigs were radically different, because the Bristol designer developed a clever but complicated spritsail arrangement, while Gardner reduced the number of sails to a minimum.

The Wildfire, Flying Cloud, and Vagrant all turned to the new rig, and the Owen-designed Lynx, built in Italy and bought by Nathanial F. Ayer, also used it. The early races proved that the Vanitie was better than the Resolute and Mr. Clarke discarded the sprit for sails like those of the Advance. The invincible combination of Charles F. Adams and Robert Emmons, which made the Herreshoff sloop go so fast in the Cup races, was in command of the Vanitie, and turned the tables on the boat they used to sail, for the Resolute hardly won a race in which the Vanitie took part, with the exception of the Commodore's Cup on the New York Cruise.

When the staysail rig was being adopted after the Lawrence schooner's success in 1925, Herbert L. Stone suggested that it might be her hull that gave her the remarkable speed she showed. The wisdom of this was demonstrated when she won more races in 1926 than in her first season, in spite of the fact that the others had similar sail plans. It is not meant that this rig is not faster than the conventional one, but rather that it does not wholly justify the claims at times made for it. The difference in speed between a schooner with the most modern arrangements of sails and a Marconi sloop of like size and sail spread is probably much the same as the difference between the schooner and sloop rigs of the days when jib-headed mainsails were unknown. The improvement, however, is readily apparent, and the gaff can no longer compete with the staysail when speed is the object.

The result of the season's racing gave the Advance a slight lead over the Vanitie, which was more than made up for by the winning of the King's Cup by the Whitney schooner. She was the fastest in the fleet, boat for boat, and could save her time on the smaller craft as often as not. No finer yacht has raced in many years.

The Astor Cup race brought seventeen two-stickers to the

Resolute as a Sloop

starting line, a number that has never before been equalled. The Advance finished well within her handicap but was disqualified, thus giving the race to the Pleione, owned by J. V. Santry, Commodore of the Corinthian Yacht Club. This little schooner was a New York Yacht Club, 50-footer, rerigged with staysails under L. Francis Herreshoff's direction. She was also successful in the Vice-Commodore's Cup race for the run from Vineyard Haven to Mattapoisett.

Taken as a whole it is apparent that the popularity of racing major yachts is increasing. The pleasure experienced in sailing a boat is recognized by thousands, but what arouses the interest of the average person is a story or picture of one of the great schooners in a cup race off Newport or Marblehead. It matters little to the general public what small craft do; the grace and beauty of the big yachts will always appeal to the greater number.

DURBAN SHRIMP CLASS [1]

By Captain Alexander Anderson

SOUTH AFRICA leads the way with a new class that should be of interest to yachtsmen throughout the world. The accompanying photographs show some of the Durban Shrimp Class of sailing boats which are within reach of every lover of the great sport. Primarily, the idea is to get the boys interested in boats and to get the older and more experienced men interested in the boys. Both points are well worth while.

The Shrimp Class boats are limited to 11 feet, 6 inches on the waterline and not over 12 feet overall. The fixed beam is 4 feet, 6 inches. Probably the most interesting departure from the usual one-design or restricted class rules is the provision that the

Shrimp Class Boats Are Useful for Pleasure Sailing as well as Racing

boats must be built by an amateur and that he must have the help of the two boys who later will form the crew of the boat. The designer can be a professional or an older amateur, but the

[1] This paper is printed by the courtesy of *The Rudder*.

This description of a restricted class for youngsters comes from Durban, South Africa, but it might well be copied in other sections of the world. We believe it has many features of improvement over the usual small one-design class idea.

actual building must be by a non-professional with the two assistants of under sixteen years of age.

The cost of the hull material is limited to $25, and the hull must not be so heavy that it cannot be lifted by two men. They carry

Regatta Committee Following the Races

no ballast and will float if capsized. In addition both boys must know how to swim. A further restriction is that the boats be decked over with a cockpit for the helmsman.

An iron centreboard is fitted and either one or two rudders. Hulls may be flat-bottomed, V-bottom or slightly rounded, but

Port Natal Yachts

the round scow bow is not allowed because of the difficulty of constructing it well. The sail-area is approximately 90 square feet, but a spinnaker may be carried. It is easy to believe that it is a fine sight to see a boy of under sixteen setting a spinnaker.

DURBAN SHRIMP CLASS

Mr. Rupert Brown, a Durban yachtsman, makes a present of a suit of professionally-made sails, imported from England to every pair of boys who build a boat. Surely a fine way of encouraging the sport.

The Shrimp Class Starting a Race at Durban, South Africa

So far the sport has been good with both the younger and older element interested in the designs and in the racing. This class is doing a great deal to promote the knowledge of sailing and it is not surprising to know that a number of the boys have already become proficient in the ancient and honorable art.

Q CLASS YACHTS

By Edwin J. Schoettle

ONE of the first results of the standardization of measurements of racing yachts in America, by which they were given specific ratings in alphabetical order according to size, was the introduction of the Q class in the spring of 1904, the sloop, Arestes, being the initial yacht under this new rule. She was followed by the Dorothy Q, another Herreshoff production, and the next year by the Eleanor, probably the fastest in the class in the first ten years of its existence. Anyway the latter, owned by Francis W. Fabyan of Boston, won the first Q Class Trophy, a cup presented by Sir Thomas Lipton.

After some twenty of these boats had been built, interest began to subside, although the class was a feature in the Jamestown Exposition of 1907, where the Manhasset, after winning the Centennial Cup, was disqualified for being over her rating, and the trophy awarded to the Capsicum, owned and sailed by C. Sherman Hoyt of New York.

Few new boats were built during the five years immediately preceding and for several years after the World War, but in 1924, J. P. Morgan, of New York, made an effort to revive interest by ordering a Q boat from Herreshoff. No one else in Long Island Sound responded and the yacht was sold within a few months to Joseph V. Santry, of Marblehead, where the revival had actually taken effect.

Q CLASS YACHTS

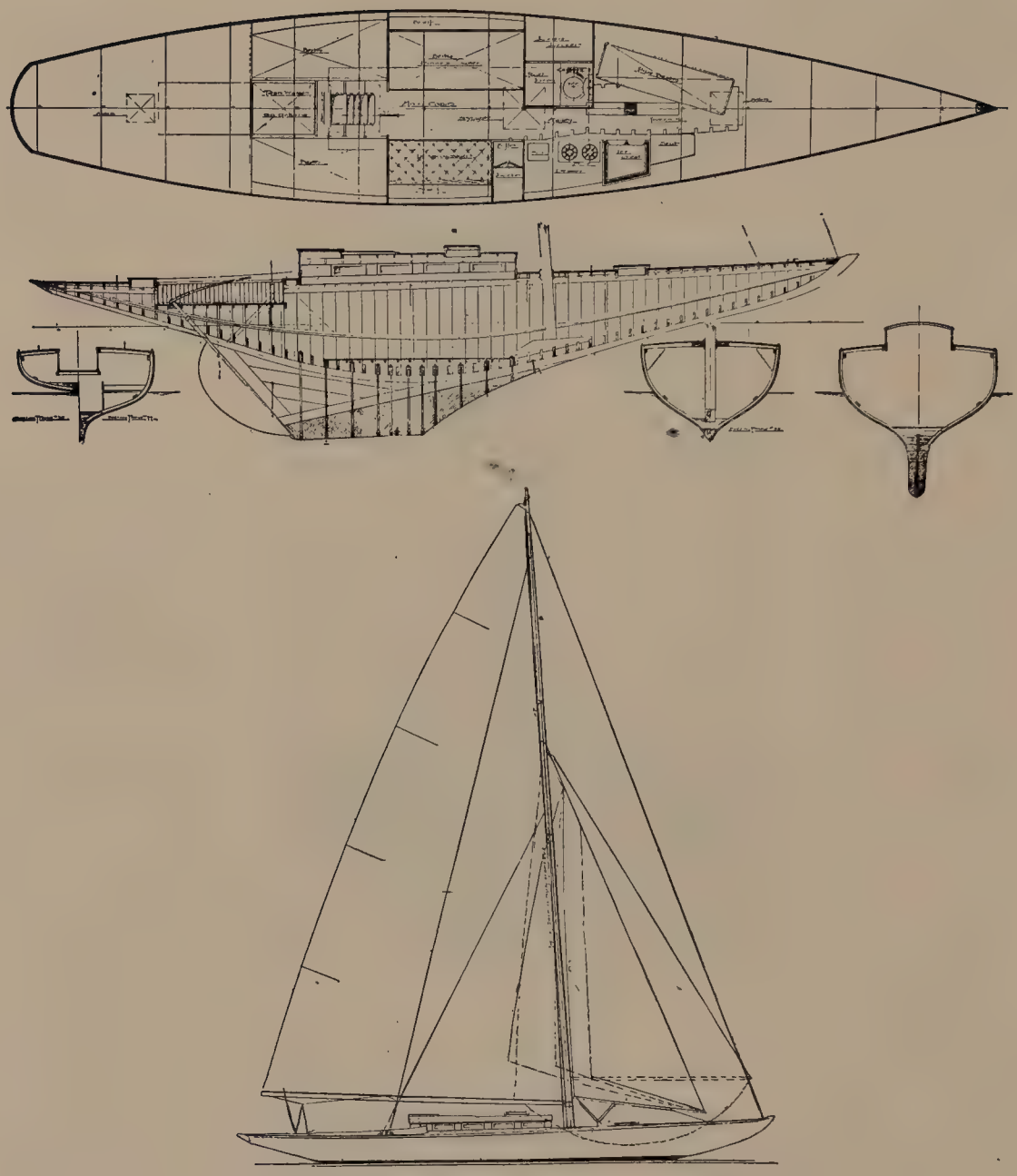
In 1925 three yachts were built for Marblehead. Two of them, the Sally XIII and the Leonore, being designed and constructed in Norway. The class became more popular the next year when four others were added, one built in Norway and three in America. The following year two more were added to the class, but as a couple were retired as cruisers, the total number remained the

Q Class Knockabout

Owned by Commodore Charles Francis Adams, Eastern Yacht Club, Marblehead, Mass. Designed by Burgess, Swasey & Paine. Built by F. D. Lawley, Inc.

same. There were no new Qs in 1926, but in 1927 three were built, two in Boston and one in Norway, all from designs by American naval architects.

In 1925 the Corinthian Yacht Club, of Marblehead, through the generosity of a number of its members, placed a Q class cup in competition, and at the close of the season of 1927 two legs on it had been won by B. Devereux Barker and one by Lawrence F. Percival, three wins being necessary for permanent possession.



ARRANGEMENT AND SAIL PLAN—CLASS Q SLOOP
Designed by Frederick M. Hoyt

Long Island Sound however held aloof, and while several of the Marblehead yachts were sold to yachtsmen on the Great Lakes, there were no notable races in those waters for the class.

Q Class Yachts Starting in a Race off the Corinthian Yacht Club at Marblehead

A quartette of Chicago yachtsmen visited Marblehead in the summer of 1927 and sailed a series of races in Q boats with members of the Corinthian Yacht Club, the latter winning the intersectional contest.

One of the staunchest supporters of the Q class for many years was L. Francis Herreshoff, a son of the famous Bristol designer, Nathaniel G. Herreshoff, and a naval architect of distinguished ability and originality. The younger Herreshoff based his advocacy of the Q class on the following propositions:

(a) That the yachts have more cubic room for use as a cabin in the hull than any other racing or cruising boat of the same sail-area in the world.

(b) That the class has more freeboard for the sail-area than any other racing yacht.

(c) That the class is longer on the waterline and overall for the amount of sail-area than any type of boat of her size used in America.

(d) That Q boats are not only very able, but very dry.

(e) That they are seldom reefed.

(f) That the average speed for sail-area is very high.

(g) That they are capable boats, well adapted to long life, are built well, and are extremely desirable as an afternoon sailing as well as a cruising boat.

(h) That they cost 25% less than boats of the same amount of headroom and cabin capacity designed under the International or European rule.

Young Herreshoff also pointed out that in the development of the Q boat the hulls have been gradually lengthened and the sail-area reduced as shown by the following dimensions:

	Overall	*Waterline*	*Beam*	*Draught*	*Sail-area*
Dorothy Q (1904)	36′	26½′	10′	6′	1,000 sq. ft.
Noreaster V (1928)	50′	30′	7′	6½′	907 sq. ft.

The boats of the Q class designed under the Universal Rule correspond closely to the 8 metres under the International Rule.

THE NEW YORK THIRTIES

By Edwin J. Schoettle

LAUNCHED in the spring of 1905, this remarkable group of boats is about to enter its twenty-fourth year of successful racing on Long Island Sound. Its long career of competition, carrying with it many times the usual amount of interest, has never been equalled by any other class of one-design racing boats. It is worthy of note that the interest in the racing of these yachts has never lagged, and the season of 1927 in many respects, far surpassed all others, not excepting even the first year. I will write something about the past season later on. "Why this continued interest?" is a question any yachtsman might well be privileged to ask, but to attempt to answer it is a more difficult matter.

The boats were originally designed with good application of the thought of the purpose for which they were being built. In other words, they were designed by a man of vision and ability, and built by men of the same qualifications. It follows, of course, that these yachts were well and strongly constructed of only the best of materials and workmanship. It is interesting to state that when Herreshoff took the orders to build the original eighteen boats, if he followed his usual proceeding, the prospective owners ordered without knowing exactly what they were going to receive; and even at this late date very few owners are acquainted with the character and thickness of materials used and the weight of outside ballast, etc.

This, I have been told, was the Herreshoff custom, and for that reason all the creations of this wonderful genius are clouded in mystery and lack of details. History will probably not repeat itself in this respect, because quite the most interesting phase of boat building lies in the advance planning, with its consequent mulling over of designs, and the natural accompaniment, dreaming of the victories and thrills to come.

Photo by Rosenfeld

New York Thirty Class

Thinking about these builders has made me wander from the subject, but to return—the boats were originally well built, and always well owned. The eighteen men loved the game, were crazy about their yachts, cherished and took care of them, fought in the defence of them and contributed to the proposition generally that red blood which is so necessary to sport and life. Their continued popularity is, however, based mostly on a sentimental

regard for them and a well-founded resolve of the Thirty Class to hold them together.

They are not particularly fast and although occasionally used for cruises to Bar Harbor and return, they are poor models to be followed if long voyages are to be taken into consideration. Their cabins are small, lacking accommodations and headroom, and the cockpits are much smaller and more cramped than would be

Photo by Rosenfeld

NEW YORK THIRTY CLASS

found on a 20-foot Catboat. The tiller sweeps the cockpit over nearly the entire area. I am reminded of a boat I once owned that had this weakness. Mr. A. Edward Newton, who has been kind enough to introduce this book, when aboard with me on a trip, remarked in his best satirical vein: "If that dashed stick of wood you have in your hand was a little longer, there wouldn't be a bit of room for anyone else to sit down in comfort, except yourself."

Mr. Seabury Lawrence wrote interestingly of the Thirties in a paper published in *Yachting*, January, 1925. He quotes statements made by Harry Maxwell, who is a good sailor (but a reluctant writer, as I have discovered) and of these statements I quote a little about the history of the Thirty Class boat Phryne, "Built originally for Henry L. Maxwell this one yacht has the

Photo by Rosenfeld

NEW YORK THIRTY CLASS

distinction of never having had her name changed. The original owner sold the boat to C. W. Wetmore, who sold it to J. Rogers Maxwell, who later sold it back again to Mr. Wetmore.

"Mr. Maxwell explains this unusual sequence of transfers by saying that the first sale of Phryne took place during an illness of his father, who, upon recovery, demanded that the boat be bought back again. This was done, and young Harry Maxwell was once more on the quarter-deck of a Thirty before going

to more ambitious ships. Phryne later became the property of John F. O'Rourke, who sold her to former Commodore Morgan. After racing the boat for several seasons, and enjoying some fine sport, Commodore Morgan built Grayling in the 50-foot class, and Phryne was sold in 1914 to George Nichols, who now has risen to the post of Commodore of the New York Yacht Club. Mr. Nichols sold Phryne several years ago to her present owner, M. V. B. Wilcoxson, of New Rochelle, who has not raced the yacht and has refused to sell her, although it is said that several offers have been made for her, one by former Commodore Morgan, who wished to re-purchase the yacht for sentimental reasons." Mr. Morgan is now the owner.

The story of each one of the class would read somewhat like that of the Phyrne. Some few transfers, unfortunately, have taken several of them away from racing. The list of owners past and present contains some of the names of the best known and respected men of yachting, finance, business, and other activities. The winners of 1926 and 1927 were:

WINNERS IN 1926

NY–4 Narcissus	Frank S. Page	1st Prize
NY–16 Nautilus	J. H. Ottley	2nd Prize (Tie)
HY–11 Oriole	S. C. Pirie	
NY–13 Phantom	T. J. S. Flint	3rd Prize

WINNERS IN 1927

NY–12 Minx	W. C. Atwater	1st Prize
NY–11 Oriole	S. C. Pirie	2nd Prize
NY–16 Taurus	W. L. Inslee	3rd Prize

The season of 1927 was marred by an unfortunate incident that took place in the second race of the series on Memorial Day, held under the auspices of the Harlem Club and the course from Execution Light. The boats have always, by agreement, maintained the gaff-rig, but on this occasion Phryne, sailed by Mr. J. P. Morgan, himself, came out with a Marconi rig. This was not a popular move with some of the other captains (being contrary to the understanding), and Mr. Atwater of the Minx protested Phryne's right to sail in the one-design class. When the

Photo by Rosenfeld

COMMODORE J. P. MORGAN'S NEW YORK THIRTY YACHT, PHRYNE
Rigged with Marconi sail. The only boat in the class without a gaff-sail

race was three-quarters over, the Minx, while on the port tack, held her course against the Phryne's right of way on the starboard tack, and as a consequence, the latter fouled the former boat when her rigging scraped the boom of the Minx.

The yachts finished the race with about ten seconds between them, the Minx being first over the line. Mr. Morgan, immediately at the finish, protested Mr. Atwater's action and hence a struggle that has marred the record of this wonderful class. Up to this time the protests have been carried to the Harlem Committee, then to the Yacht Racing Association of Long Island Sound and are to be further fought out by the North American Yacht Racing Union. All decisions so far have been against Mr. Atwater. I was aboard the Minx in this otherwise very interesting and delightful race and can well appreciate the difficulties the various regatta committees are having in an effort to make an equitable decision.

The following is a complete list of the Thirties, with record of their various changes of names and of owners:

1. Alera. Built for A. H. and J. W. Alker. E. P. Alker part owner, 1910. 1914, John L. Cutler—1919, Francis W. Belknap—1924, Howard F. Whitney. 1927, Howard F. Whitney, Jr. 1927, name of yacht (Alera).

2. Ibis. Built for C. O'Donnell Iselin. 1908, J. P. Morgan, Jr.—1910, Howard W. Maxwell—1913, W. H. Busk—1914, John A. Ten Eyck, 3d (Nirvana)—1916, E. H. Prentice (Silhouette)—1917, Charles Hollingshead—1917, H. Francis Duryea—1918, C. Rexford Croul—1921, R. H. Amberg. 1927, sold to John Dallett and sent to Porto Rico on the deck of one of the Red D (Dallett) Line of steamers. 1927, name of yacht (Silhouette).

3. Atair. Built for Cord Meyer (George C. and J. Edward Meyer). 1912, J. A. Mahlstedt (Okee II)—1915, Irving E. Raymond (Hope) (named Carita for a short time)—1917, Gustav B. Kulenkampff (Lesmona)—1918, Laurence Marx (Alberta)—1923,

Wilbur Veitch (Alida). 1927, F. L. Carlisle. 1927, name of yacht (Atair).

4. Maid of Meudon. Built for W. D. Guthrie. 1906, E. S. Willard—1907, W. J. Matheson (Melody)—1910, Stephen C. Hunter (Juanita)—1913, John T. Pratt—1917, W. Gilman Low, Jr. (Houqua)—1922, J. B. Dunbaugh (Countess)—1924, C. Sherman Hoyt. 1925 F. S. Page (Narcissus)—1927, Melville R. Smith (Interlude). 1927, name of yacht (Interlude).

5. Pintail. Built for August Belmont (August Belmont, Jr.). 1909, E. D. Morgan (Gossip)—1912, Lloyd C. Griscom (Yolanda) —1913, Ogden Reid (Lena). 1927, name of yacht (Lena).

6. Dahinda. Built for W. Butler Duncan, Jr. 1907, W. Emlen Roosevelt—1910, George Emlen Roosevelt—1914, Frank B. Draper (Playmate)—1920, H. E. Glover, Walter Benhizer and Herman Bruns—1923, John E. Beggs—1924, Edward P. Flanagan and C. H. Whitehead (Dahinda)—1924, Henry C. Frisch. 1927, name of yacht (Dahinda), Yawl rig.

7. Tabasco. Built for Henry F. Lippitt. 1906, W. Barklie Henry—1907, Johnson de Forest (Nepsi)—1916, Gherardi Davis (Alice). 1927, name of yacht (Alice).

8. Carlita. Built for Oliver Harriman. 1907, Frank C. Swan— 1911, Gustav B. Kulenkampff—1915, Stephen H. Brown (Carolita)—1917, Morton H. Smith—1918, Chester M. Curry—1919, W. H. Childs (Delight?)—1921, Ormsby M. Mitchell (Carolita)— 1926, Leo Friede (Mermaid)—1927, Leo Friede. 1927, name of yacht (Mermaid).

9. Adelaide II. Built for Philip H. and George A. Adee. 1910, F. B. Bragdon (Amorita)—1923, A. G. Paine, 3d—1923, E. B. Hall, Jr.—1924, Hendon Chubb—1926, Howard C. Brokaw. 1927, name of yacht (Amorita).

10. Linnet. Built for Amos Tuck French. 1906, Francis R. Cooley—1916, Charles H. Talcott. 1927, name of yacht (Linnet).

11. Oriole. Built for Lyman Delano. 1906, Charles A. Goodwin—1913, Edmund Fish—1917, S. C. Pirie. 1927, name of yacht (Oriole).

12. Neola II. Built for George M. Pynchon. 1908, Ralph N. Ellis (Hera II)—1910, Holland S. Duell (Rowdy)—1914, J. A. Mahlstedt (Okee)—1916, L. G. Hamersly—1917, Alfred H. Morris (Amaranth)—1919, Charles Belsky (Rowdy)—1921, H. L. Curry—1923, J. A. Mahlstedt (Okee)—1923, W. H. Hoffman (Minx)—1925, W. C. Atwater, Jr. 1927, name of yacht (Minx).

13. Minx. Built for Howard Willets. 1909, John J. Mason—1910, James Pierpont (Cornelia)—1911, William C. Pell—1912, Sydney F. Ward (Miriam)—1914, Wilson Marshall (Minx)—1916, Johnson de Forest—1919, Theodore S. Clark—1920, Robert M. Nelson—1922, W. H. Hoffman—1924, T. J. S. Flint (Phantom). 1927, A. H. Renshaw. 1927, name of yacht (Phantom).

14. Cara Mia. Built for Stuyvesant Wainwright. 1907, Mrs. E. M. Scott (Carmelita, 1909)—1910, F. T. Catlin—1917, D. R. Richardson (Mizpah)—1922, Lucien T. Warner (Fiji II)—1924, Wm. D. Flanders. 1927, W. C. Atwater, Jr. 1927, name of yacht (Fiji II).

15. Banzai. Built for Newbury D. Lawton. 1906, C. D. Mallory—1909, Gottfried Piel—1914, Edmund Lang. 1927, name of yacht (Banzai).

16. Nautilus. Built for A. G. and H. W. Hanan. 1908, E. E. Dickinson, Jr.—1913, Charles H. Mitchell—1916, W. Barklie Henry—1919, Arthur Iselin—1920, Wm. H. Silk—1920, Harvey J. Flint (Wanderer VIII)—1920, M. E. Hatfield (Nautilus)—1923, J. H. Ottley. 1927, W. L. Inslee and Robert L. Hague (Taurus). 1927, name of yacht (Taurus).

17. Phryne. Built for Henry L. Maxwell. 1906, Charles W. Wetmore—1909, John F. O'Rourke—1910, J. P. Morgan, Jr.—

1914, George Nichols—1915, M. V. B. Wilcoxson. 1925, J. P. Morgan. 1927, name of yacht (Phryne).

18. Anemone II. Built for John Murray Mitchell. 1906, Alfred G. Vanderbilt (Caprice)—1910, Mrs. Alfred G. Vanderbilt—1912, Ralph N. Ellis—1913, Samuel C. Hopkins—1915, J. W. and E. P. Alker (Alerion II)—1916, Frederick L. Richards (Adios)—1922, H. T. Hornidge—1923, Charles E. Trowbridge—1924, Ernest G. Draper (Blue Moon). 1926, Robert R. Martin. 1927, name of yacht (Blue Moon).

SIX METRES IN AMERICA

By Edwin J. Schoettle

WITH the inauguration of this class of boats great steps were made toward fostering International sailing and toward bringing to the front the initiative, science, and skill of the marine architects. It is striking to observe the wide variation of measurement and of designs produced in only eight years of racing.

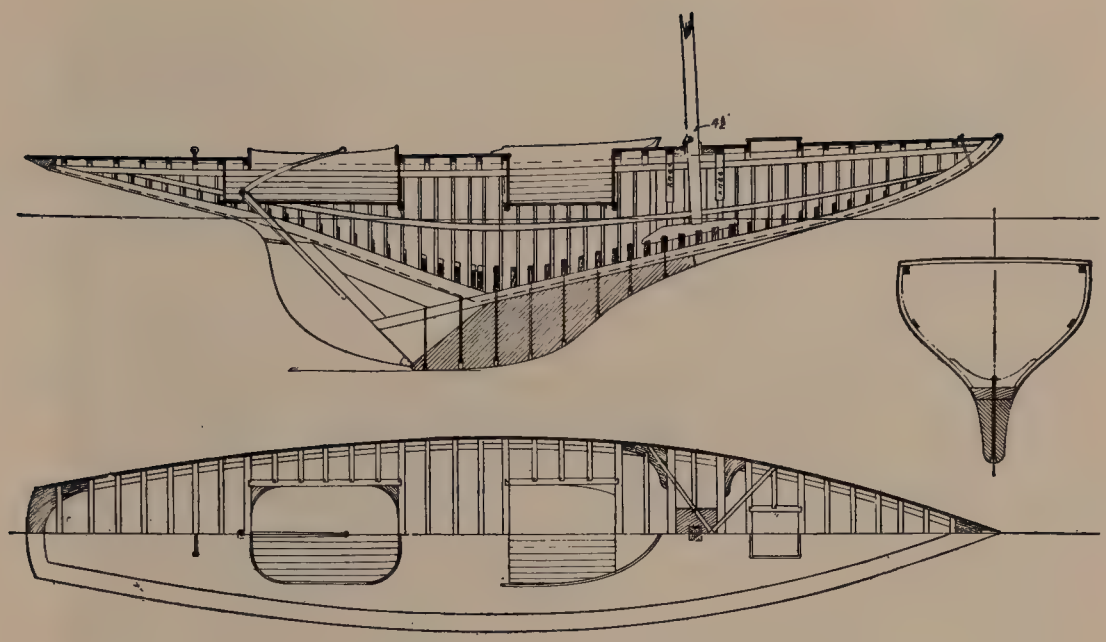
The beginning of the 6-metre class in America dates back to early in 1921, when it was announced that a number of American yachtsmen were pledged to construct sloops built to rate under the International Rule instead of the Universal Rule which previously had been the only rating rule in effect in the United States.

In that year the American activity centred at the Seawanhaka-Corinthian Yacht Club and most of the subsequent interest has emanated from that organization. Four boats were built here; Grebe and Montauk, designed by William Gardner, and Shiela and Genis, designed by Starling Burgess. Owing to the optional characteristics of the International Rule the dimensions of the boats varied considerably. Grebe's measurements were given as: overall length, 30 feet, 10 inches; waterline length, 21 feet, 9 inches; breadth, 7 feet, 4 inches and draught, 5 feet, ½ inch, sail-area 482 square feet.

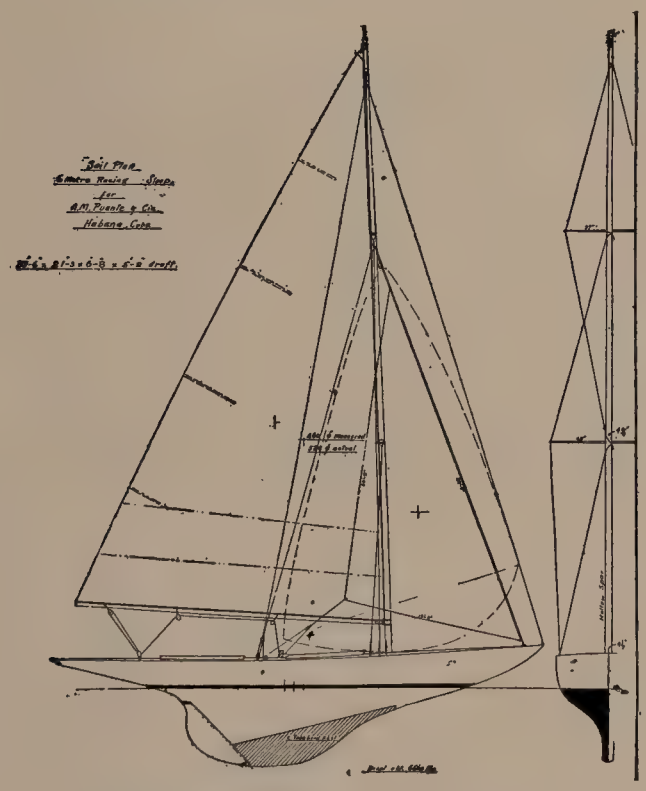
This team went to England where, at Cowes, they met an English team of four yachts. Six races were sailed, mostly in

Photo by Rosenfeld

SIX-METRE BOATS AT CLOSE QUARTERS



SIX-METRE BOAT—CONSTRUCTION PLAN
Designed by J. Murray Watts



SIX-METRE BOAT—SAIL PLAN
Designed by J. Murray Watts

Photo by Rosenfeld

Six-metre boats are so quick on the helm that skippers, when necessary, take chances of fouling. The close proximity of these boats demanded good handling

heavy weather. In several of the races an American boat finished ahead of the fleet; but on the point score, Great Britain won with 117 points to our 88.

In 1922 a number of new boats were built and raced on Long Island Sound in preparation for the invasion of the English fleet,

De Ruyter, the Dutch Six-metre

promised the year before. At one time there were sixteen craft rating in the class in this country.

Eight yachts raced at Oyster Bay, four from Great Britain and the remaining quartette representing the United States; Lea, Clytie, Grebe, and L'Esprit being local contenders. After six races the American team led with a point score of 111 against the British score of 104.

The following year 1923 again saw an American fleet in English waters, this time on the Solent. For the first time the United States representatives were utterly outclassed. Lea, Clytie, Hawk, and Ingomar were the contenders from this side of the water.

In 1924 the racing was again in America at Oyster Bay, our team being composed of Paumonok, Heron, Lea, and Dauphin.

ENGLISH ROSE, BRITISH SIX-METRE BOAT

Seven races were sailed in order to settle a tied score with the result that Great Britain scored 129¾ points against the American score of 121 points.

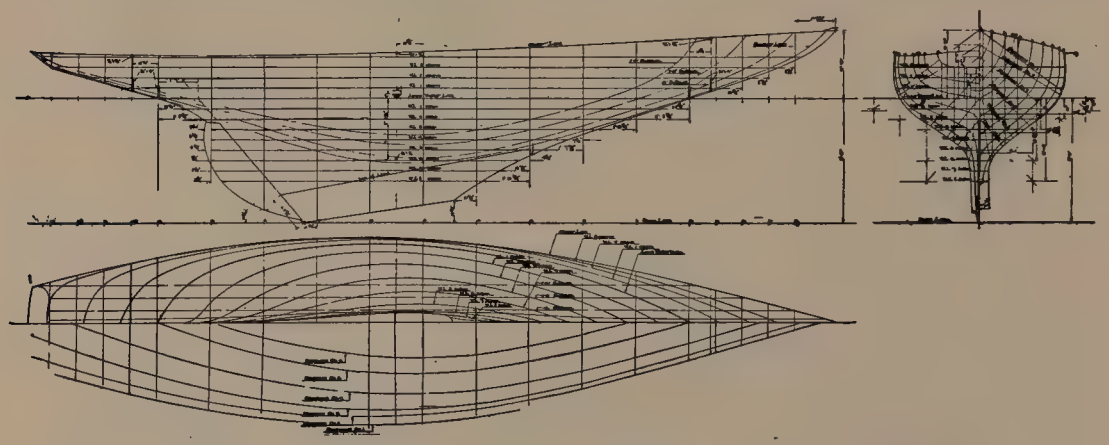
Scandinavia took the place of Great Britain in the series sailed at Oyster Bay in 1925. Denmark, Norway, Sweden, and Finland were each represented by one boat and Lanai, Lea, Natka, and

TWO SIX-METRE YACHTS OF EUROPE

Dauphin flew the Stars and Stripes. After a series of six races the American team came off victorious with four races to its credit.

The year 1925 was notable in 6-metre boat history. Following the races with the northern European sailors, the American boat Lanai was shipped over to England to race against the best of the British boats. The Lanai won and the Seawanhaka Cup, that had been won by Great Britain the year before, returned to America.

The yachting season of 1926 was marked by no international contest in the 6-metre division, although there were many regattas



LINES—SIX-METRE CLASS, EARLY MODEL YACHT, PRISCELLA
Designed by Charles D. Mower

for the American boats on Long Island Sound and others of the class raced Down East.

Probably the most important sailing contest in 1927 was the International series at the Seawanhaka-Corinthian Yacht Club. These races were for the Scandinavian Gold Cup and the United States, Great Britain, Norway, Denmark, Sweden, Holland, Finland, and Italy were all represented with one boat each. The rules specified that the boats which did not win one or more of the first three races would be eliminated. Finland, Norway, and Sweden survived and sailed the final series which went to Maybe, the Swedish entry.

Down East there was also in 1927 another 6-metre race for the Seawanhaka Cup between Clytie and the Norwegian boat Noreg. After a prolonged series Noreg won and took the cup to Sweden.

Photo by Rosenfeld

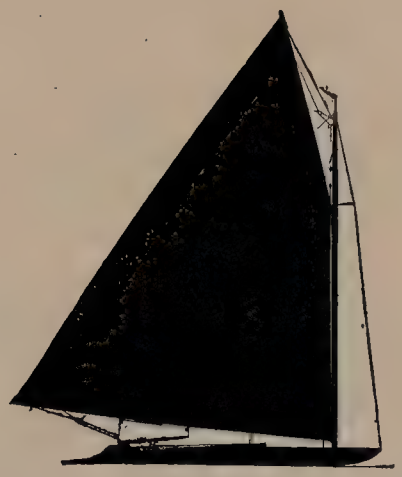
SIX-METRE BOAT, ATROCIA

Note the larger sail forward instead of the usual order

In the aggregate the 6-metre class has met with popularity and if nothing else has resulted it has given us a good idea of the sort of boats produced under the International Rule. The boats are much heavier in construction and probably more seaworthy than the boats we had here, built under the Universal Rule. The class has produced interesting examples of International racing that have been excelled by only a very few others. The boats, being of a stronger and sturdier type, have invited the interest and attention of sailors from countries that have not, heretofore, engaged in races with American yachts. A yacht built in this class has other uses and for this reason several 6-metre hulls that had failed to make good as racers have been changed to handy and fast cruising boats.

1927 Six-Meter Boats in the International Series

Name of Boat	*Owner*	*Sail-Area*	*Overall Length*	*Waterline Length*	*Rating*
Lily	Konsortium, K. D. Y.	451.6 Sq. Ft.	36.97 feet	24.97 feet	19.68 feet
Merenneito	H. A. Elfving, Esq.	477.5 Sq. Ft.	34.62 feet	23.98 feet	19.68 feet
English Rose	F. Morgan Giles, Esq.	463.2 Sq. Ft.	36.62 feet	24.32 feet	19.68 feet
De Ruyter	Syndicant "Seevanck"	442.6 Sq. Ft.	37.44 feet	24.70 feet	19.68 feet
Mati	Com. Francesco Rosazza	464.8 Sq. Ft.	36.30 feet	24.20 feet	19.68 feet
Noreg	Crown Pr. Olaf Syndicat	465.5 Sq. Ft.	36.20 feet	24.51 feet	19.68 feet
Maybe	Sven Salen	467.5 Sq. Ft.	37.21 feet	24.84 feet	19.68 feet
Lea	F. E. R. Nichols, Esq.	521.6 Sq. Ft.	31.04 feet	24.26 feet	19.68 feet
Clytie	Henry B. Plant, Esq.	495.0 Sq. Ft.	34.65 feet	23.74 feet	19.68 feet



BARNEGAT BAY SNEAK BOXES

By Orton G. Dale

ORDINARILY one thinks of evolution or the development of a type as taking a long time, if not ages. However, in the case of the 20-foot Barnegat Racing Sneak Box many men are still living and sailing racing craft who saw its rise and decline. Following step by step the record of advance through the various stages, from the original gunning box to the final model as sailed at present, is one of the instructive studies of small sailboats. Sneak boxes were introduced on Barnegat Bay probably about ninety years ago. Their principal use was for gunning and fishing. They were called Sneak Boxes because, due to their slight projection above water and easy lines, they could be quietly rowed or pushed up to the game. By covering it with meadow grass or branches the box was easily made into a good portable screen or blind. Quoting from *Four Months in a Sneak Box* by Nathaniel H. Bishop, published in 1879, we have given the origin of the Sneak Box:—

"With the assistance of Mr. William Errickson of Barnegat and Dr. William P. Haywood of West Creek, Ocean County, New Jersey, I have been able to rescue from oblivion and bring to the light of day a correct history of the Barnegat sneak-box.

"Captain Hazelton Seaman of West Creek Village, New Jersey, a boat builder and an expert shooter of wild-fowl about the year 1836, conceived the idea of constructing for his own use a low-

decked boat, or gunning punt, in which, when its deck was covered with sedge, he could secrete himself from the wild-fowl while gunning in Barnegat and Little Egg Harbor bays. * * * Mr. Seaman named the result of his first effort the 'Devil's Coffin'

COPY OF AN OLD PRINT OF BOND'S HOTEL

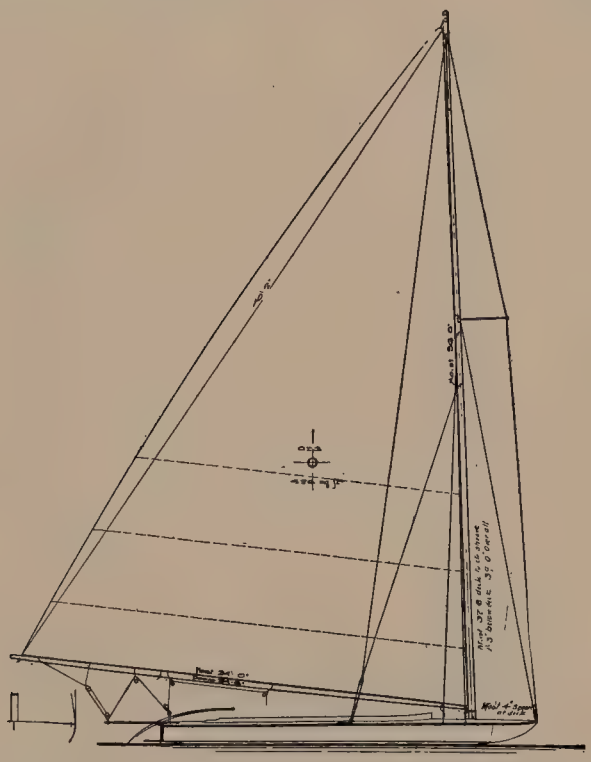
The costumes are interesting. The two small boats on the left are sneak boxes. The large catboat shows interesting lines

the bay-men gave her the sobriquet of 'sneak-box' and this name she has retained to the present day."

There is a print (dated about 1870) that shows old Bond's Hotel, formerly located on a bit of beach four miles south of Beach Haven, New Jersey. In the foreground there are two boats tied up to the shore. Both of these are types that existed

about fifty years ago on Barnegat Bay. The more interesting one is the picture of a so-called "Barnegat Bay Gunning Box."

The shallow waters required that they draw but little water. With the centreboard up boxes could be sailed in a few inches, and with board down they took less than 2 feet. In winter when used for gunning, with the bay partially frozen over, no boat surpasses them for efficiency and ease of handling. They are



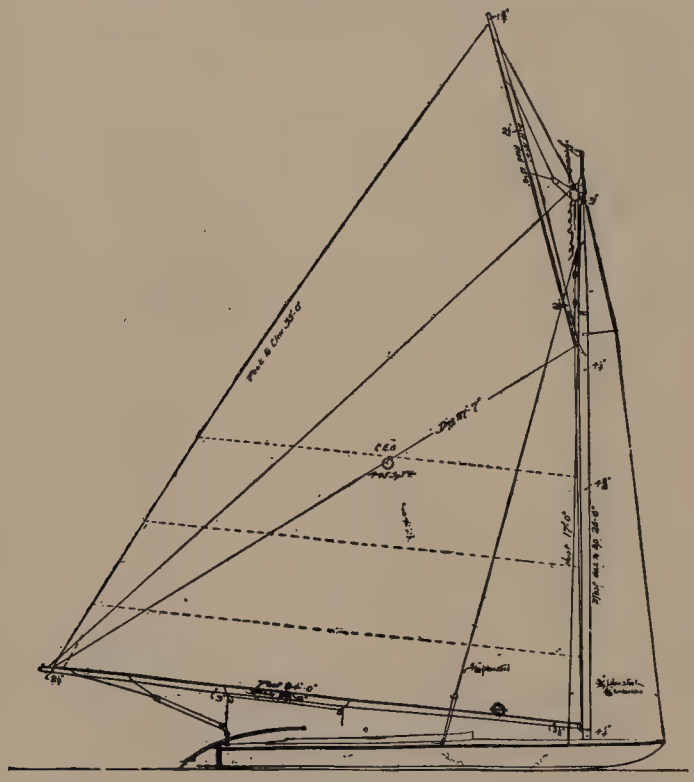
TWENTY-FOOT SNEAK BOX—SAIL PLAN WITH MARCONI RIG
Designed by Charles D. Mower

rowed in the open water stretches, and hauled up on the frozen sections with long sharp boat hooks. Two battens along the bottom of the hull serve as runners when travelling on the ice. These runners are often metal shod, so that the boats are most successfully used for travelling on the ice either under sail or by pushing with the pike poles.

They were built in barns, backyards, and even in bedrooms by hundreds of fishermen and amateurs residing on the coast

of New Jersey from Cape May to Sandy Hook. Few of the boat builders in the early days troubled themselves with building such small class boats. It is one of the interesting phases of boat developments that the early types, although built by men living 200 miles apart, were so similar in design.

The length was usually 12 to 14 feet and beam 4 feet, 6 inches to an extreme of 5 feet. The under bows were full, and the deck

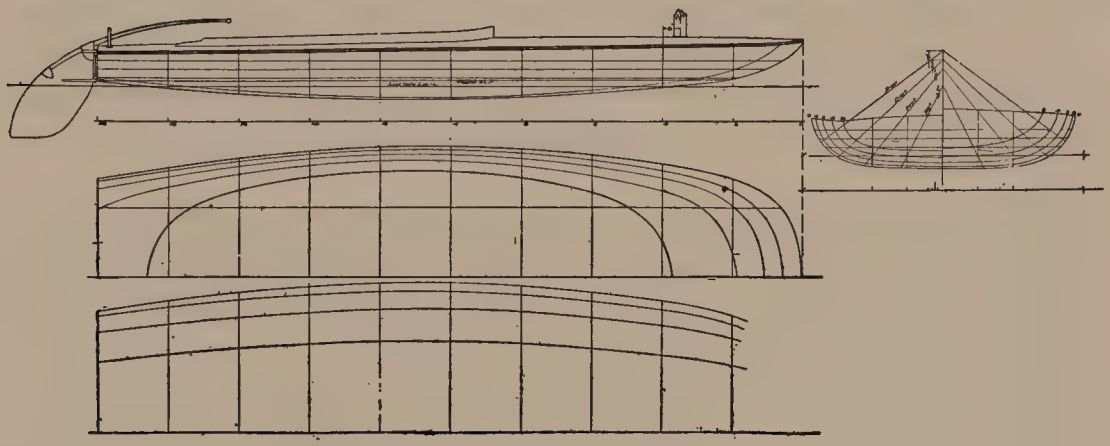


TWENTY-FOOT SNEAK BOX—GAFF HEADED SAIL
Designed by Bowes and Mower

close to the bow was flat. The greatest freeboard was about 7 inches; the overhang of the bow about 1 foot; the stern transoms flat and plumb. On the boats used around Barnegat Inlet the rudders were pintle hung, equipped with yokes and tiller lines. Sometimes instead of the yokes and lines a long tiller was used.

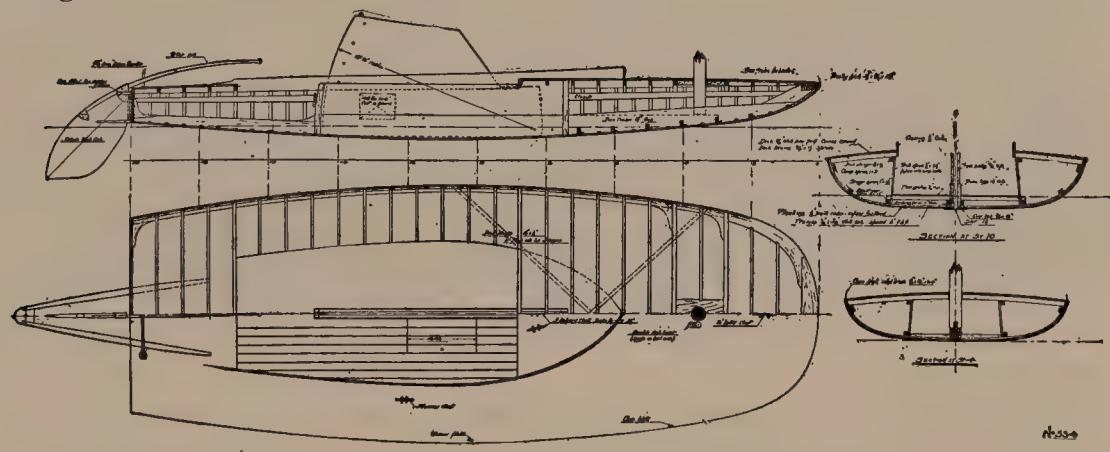
The early gunning sneaks, as built in the upper reaches of Barnegat, had no rudders, being steered by an oar from the leeward side. The boats were completely decked over, except for

a small cockpit about 2 feet wide by 3½ feet long. A removable hatch to fit tightly over the cockpit was always part of the inventory. The edge of the deck completely around the hull was



LINES—TWENTY-FOOT SNEAK BOX
Designed by Charles D. Mower

fitted with a removable rack fastened together at the corners with hooks. These allowed the gunners to stow with safety their decoys on the crowned decks. The rowlocks were of wood hinged to the deck so they lay flat when not in use. The rower



ARRANGEMENT PLAN—TWENTY-FOOT SNEAK BOX
Designed by Charles D. Mower

generally faced forward and pushed on his oars. The centreboards were small and of dagger shape. Masts were light, making them easy to set and unstep. Sails were generally sprit and

occasionally "leg-o'-mutton." When not in use the sails were furled on the mast. The sprit sail allowed the spars to be made short, so that they could be stowed under the deck.

This short history of these boats is given because they were the forerunners of several classes of pleasure sailors and racers with overhanging spoon bows and gaff rigs, from which designers developed the 20-foot Marconi-rigged racing sneak boxes of today.

Many Barnegat sailors now in middle life had their first experience in gunning boxes. Boats of this type are still used for rowing, sailing, and as dingees, also for their original purpose of gunning. For their size the gunning box is remarkably seaworthy. Boxes of 12-foot length have made the trip from Pittsburgh to New Orleans via the Mississippi River; New York to Miami, Florida; and from New Bedford, Mass., to Bay Head, New Jersey; the crews suffering no unusual hardships. In the early nineties the type was lengthened to 16 and 18 feet for racing craft, the result being a large fleet and keen competition.

In 1905 it was felt that a larger boat was desirable. It is a question how much of this feeling was due to the fact that one of the 18-foot class had consistently been winning all the races for several years. Consequently, in 1906 a new size, limited in length to not more than 20 feet overall, was introduced. These boats were from 19 feet, 6 inches up to the limit in length, and varied in width, form, and sail-area, according to the whim of the builder or designer. They all carried gaff-headed sails of from 450 to 600 square feet area, and were equipped with single rudders and single centreboards. No restriction was placed on ballast fixed or movable, and none on number or weight of crew.

From 1906 to 1910, nearly 50 boats of this type were built and raced. It was a real fleet, and resulted in some clean sport. These boats all carried movable ballast in the shape of sand bags, and, in addition, some had dead weight stowed away under the floorboards. In an ordinary full sail racing breeze, 6 men and about 18 sandbags made up crew and ballast. In heavy weather it was not uncommon for a boat to carry 8 men and 35 bags.

The bags weighed approximately 30 pounds each. With all bags and crew to windward a tremendous strain was exerted on the hull and rigging, to say nothing of that on crew and skipper. At times under these conditions going about on a new tack was a matter that called for care. The bags, of course, had to be shifted, and that in 10 to 12 seconds, otherwise they would be lost, the race lost, and probably the boat upset.

The uses of small sneak boxes are varied and many. The spray shields and odd sail are interesting

Most of these boats were extremely hard on the helm due to the lack of balance between the sail pressure and underwater resistance. On a broad reach, when being driven, two men on the tiller were often required. One of the disadvantages of this class was the difficulty of obtaining crews and when procured, sufficient in number, the physical effort was too much, except for the well seasoned. The skipper also, being under a muscular

strain, was not able to devote his attention at times to the finer points of sailing.

In 1914 a new fleet of 20-foot racing boxes was launched on the bay by members of the Island Heights and Sea Side Park Yacht Clubs. These were a distinct departure from the sneak boxes built previously. They were designed by Mower, and more nearly of the Scow type. Their introduction rang the death-

Photo by Armstrong Roberts

A Seventy-five-year-old Sneak Box Still Meeting Modern Needs

This is a very interesting and valuable picture because it depicts a real antique, hull and rig

knell of the builder-designed boats. The sails were smaller and gaff-headed. The construction was much lighter; bottoms flat and bilges full. The greatest differences apparent to the eye were the absence of skeags and the presence of small dagger rudders. In spite of these changes, at the time considered so radical, the balance was so much better that even the small rudders, with consequent ease of steering, were sufficient to control the boats easily, except under most severe conditions.

When this design first appeared the old-timers called them "freaks", and said: "Wait till we get them in a blow, then we'll show them the way". Well, they did at first—in a blow. The new boats came back, but long after the race was over. Nothing was the matter with the boats. The failure was caused by poor handling. In a short time, however, the newcomers outdistanced

Photo by Engle

Mr. Dale mentions how sneak boxes, covered with meadow grass and branches, are easily made into a good portable screen or blind to be used for gunning

the old displacement type, which, with their over-abundant canvas and consequent ballast, had to be driven. The Mower boxes with their smaller sails and light construction, with no ballast, fixed or shifting, and smaller crews could be coaxed along faster. The crew difficulty was in a measure simplified. All that was required was ability to move from one side to the other in a few seconds. When "going about" the crew did not have

to shift 300 to 800 pounds of sand in canvas bags with rope handles. This made a "landsman" acceptable as crew and "going about" a pleasure instead of an ordeal. Still another one-design type of 15-foot sneak boxes was introduced about 1920, and has proven most successful. This will be treated of in a separate chapter in this book.

By 1924 the Mower boxes had thoroughly shown their superior qualities and the type was going strong, when along came the Marconi Rig. The best of these were designed by Mower, using the same hull lines as the previous 20-foot class. The altering of rig from gaff to Marconi was the principal difference and the new boats promptly put the old gaff-rigged ones out of business. Sad to relate, their glorious lives were not long to last. The boats and rigs were all right, a wonderful improvement over anything up to that time in their class, and they had demonstrated beyond doubt that the Marconi rigs were faster than the gaff rigs.

The 20-foot sneak boxes, and in fact all the various kinds of sneak boxes, have constituted a class of boats that have, on account of their merit, weathered the competition of many years of boat development. Before the advent of the latest Marconi-rigged they were the finest type of combination racing and pleasure boats. Many of them twenty years or more old are today in use, giving pleasure and recreation to their owners.

The Marconi rigged racing boxes with light-weight masts, spars, and sails, combined with a fine balance, make sailing them a scientific pleasure instead of a physical endurance contest. By using an available beach, two men can easily tilt one over on her side, and in a few hours clean and paint her hull. The sail-area is large enough to make them fast in light airs. In heavy winds, with a good sea, they are wet; but it is remarkable how well they will go to windward under these conditions. All this in a boat that sails splendidly, having a hull draught of only 6 inches, rudder draught of 2 feet, no inside nor outside ballast, and with centreboard down draws not over 4 feet. The use of the most modern type has been diminished by the high cost of building, and the extremes to which designers have gone to get more speed.

Photo by Johnson Bros.

BARNEGAT BAY TWENTY-FOOT SNEAK BOX

The author of this paper, Mr. O. G. Dale, is at the helm

Is it any wonder that their passing is at hand, when two years ago, out of the west from the Inland Lakes, there appeared on Barnegat Bay a class of scows? These are sloops, Marconi-rigged with double rudders and two bilge boards. They have relatively meagre sail-area, are of canoelike construction, perfect balance, and require small crews; which, combined with great speed and low initial cost, make it inevitable that they supersede the sneak box.

Thus the 20-foot Barnegat Racing Sneak Box passes into obscurity, notwithstanding the fact that it was generally recognized as the fastest boat of its length and rig in the world.

EDITOR'S NOTE.—That Mr. Orton G. Dale has complete knowledge of the history and the sailing of Barnegat Sneak Boxes especially as they have been developed during the past thirty years, all readers of this paper about his favorite type of boat will agree. The anchorage, in a cove located just north of his attractive summer home, built on a point of land jutting out into Barnegat Bay, one-half mile south of Bay Head, N. J., has always been the habitat of one or more sneak boxes. Although Mr. Dale has been engaged in active business he has found time to devote to sailing as a hobby and sport and is acclaimed the leading sailor of this class of boats.

In the 1927 series of International scow races held between New Jersey sailors and those of Lake Louise, Montreal, Canada, he was one of the helmsmen and skippers of the New Jersey group. It is interesting to note that his son, Slade Dale, was the man who sailed a small sneak box from New York to Miami, Florida, and later from New Bedford, Mass., to Bay Head, New Jersey, which remarkable adventure is mentioned casually in this paper. Modesty has probably prevented Mr. Dale from writing more extensively of this wonderful sailing feat that covered a distance of more than two thousand miles of water. The other long voyage, referred to: Pittsburgh to New Orleans via the Ohio and Mississippi Rivers, thence along the shore of the Gulf of Mexico was undertaken in a very small sneak box by Nathaniel Bishop in 1875 and the trip is the subject of his interesting book *Four Months in a*

Sneak Box. The boat used for this voyage was built at the village of Manahawken, New Jersey, especially for the trip and being of a type not known outside of its natural waters, excited a tremendous amount of curiosity and proved itself the best boat that could have been selected.

Having myself sailed sneak boxes in the days of crews of eight men and thirty-five sandbags, I can endorse Mr. Dale's views on the hardship this form of sailing was and pay tribute to the designers that produced a much faster boat that carried a larger sail and at the same time was handled easily by a crew of four men without ballast of any other kind. The greatest present development of the sneak box is in the 15-foot class, over 400 of which have been built and are today used all over the world. The sneak box, dating its birth as far back as 1836 is, no doubt, the earliest known model of a spoon-shaped bow boat; it is a notable fact that Herreshoff designed his first boat with a bow of this shape after seeing the Barnegat boats in action. I know of no boat that can be considered the pioneer of the overhanging bow style except the Barnegat Bay Sneak Box and for this reason the type represents a very important step in boat designing and evolution.

FIFTEEN-FOOT SNEAK BOXES AND JUNIOR SAILING ON BARNEGAT BAY

By Charles E. Lucke, Jr.

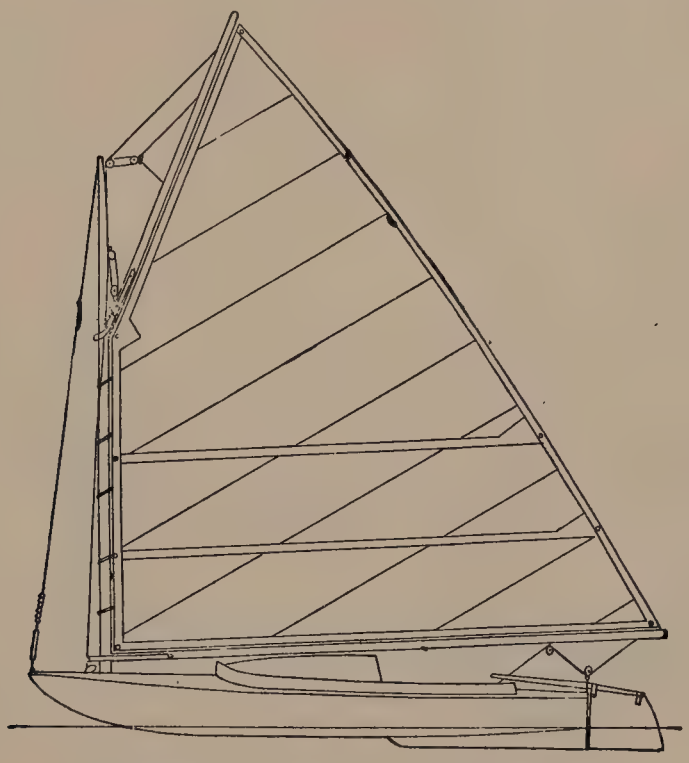
THAT junior yacht racing has spread throughout the United States in the last few years and is at the present time beginning to receive its due share of attention is recognized by all yachtsmen. But the part played in this movement by Barnegat Bay sailors is not generally appreciated, nor is the fact that Barnegat was a pioneer in this activity well known.

Peculiarly conducive to the phenomenal growth of junior sailing in Jersey waters has been the abundance of safe sheltered courses, wise supervision by the Barnegat Bay Yacht Racing Association, a healthy interclub rivalry, and—most important—the parallel development of the 15-foot sneak box. Without this boat the great fleets which weekly face the starting gun during the summer months would not be the startling reality which they are today.

The Barnegat 15-footer actually came into being in 1918, but it was not until 1920 that the class was introduced in Jersey waters. In the summer of that year the Polyhue Yacht Club of Beachwood purchased a fleet of seven boats from Mr. J. H. Perrine of Barnegat, the originator of the class. This was the first one-design fleet of colored sails in the United States and the Beachwood sailors have retained their multicolor canvas squadron to this day. The popularity of the 15-footers was con-

tagious, and the following year saw many additional purchasers among the various clubs on the bay. Not until 1922 was the 15-footer officially designated as a class by the Barnegat Bay Yacht Racing Association, however.

In that summer the first great fleets began to appear and junior sailing was given its real start, although the previous year had seen several of the clubs holding informal races for their own

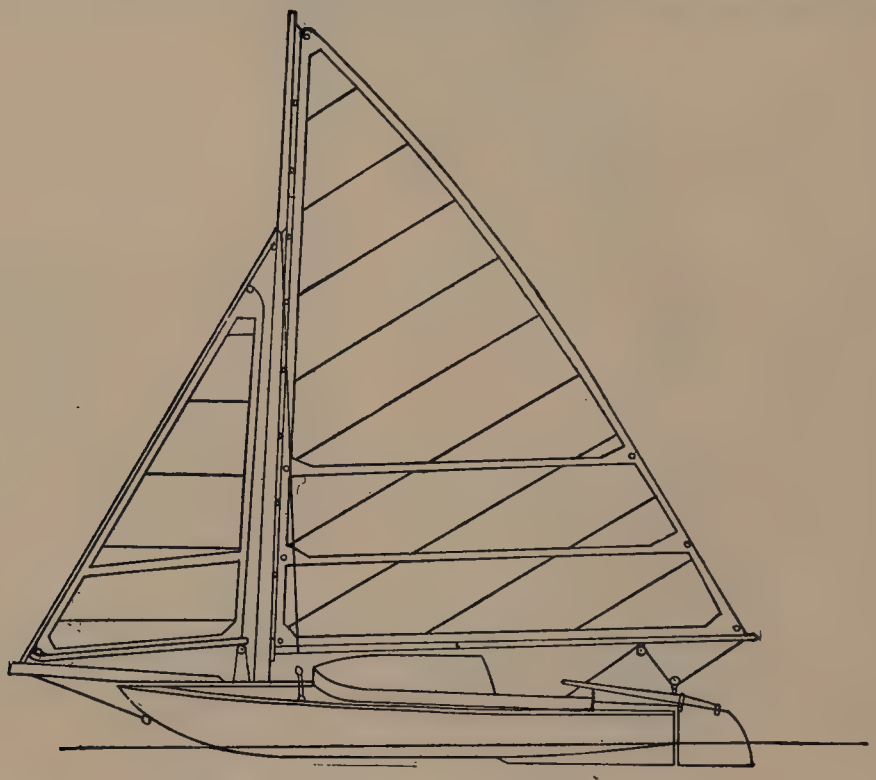


FIFTEEN-FOOT SNEAK BOX—GAFF SAIL

members. However, in 1922 the 15-foot squadrons seemed to grow in size weekly and fleets of forty entries were not uncommon, the average being well above thirty boats. During this first summer there were few restrictions in the racing rules; and, if the author's memory is correct, the present regulations covering ages of crew, sail-area, sail texture, shifting of ballast, amount of dead weight to be carried, use of pot black, and amount of lead to be carried on the centreboard were not in force.

As a consequence the available beach areas adjoining club

properties on the bay were usually found busily occupied by ambitious young skippers, scrubbing away at the overturned hulls of their 15-footers with sandpaper, pot-lead, and rags, eager to take a few seconds off their time in the race on the morrow. The zealousness of the junior helmsmen knew no bounds and ensuing races saw outriggers in use, flush decks with mouldings removed, streamline rudders and centreboards, sails laced to the mast to



FIFTEEN-FOOT SNEAK BOX—SLOOP RIG

dispense with the windage of the hoops, and much experimenting in raking of masts and setting and weighting of centreboards to give increased stability in heavy weather. All this activity bespeaks the enthusiasm of the participants, and while these devices were not generally in use, it is safe to say that the boats taking the finishing gun were usually the leaders experimentally.

Of major importance in the early impetus in junior sneak box racing was the widespread participation of all the member clubs of the Barnegat Bay Yacht Racing Association. From Bay

Head, Mantoloking, Lavalette, Seaside Park, Island Heights, and Beachwood were the 15-footers very much in evidence; and the fact that all the clubs were represented in the class was a predominant factor in its success. The Toms River and Ocean Gate Yacht Clubs were not represented in this class at that time; nevertheless, this 15-foot sneak box division had a wider and

Photo by H. Armstrong Roberts

Fifteen-foot sneak boxes are sometimes rigged as sloops. These boats give just as much sport to men as they do to boys

more inclusive interclub participation than has any other class on the bay before or since.

During this first summer of more or less unrestricted racing it is my recollection that the championship hinged on the final contest of the season, off the Seaside Park Yacht Club on Labor Day. On this occasion there was a large number of starters, about thirty-five, and the fleet was sent away on the triangular

course to Good Luck Pt., the Penn. R. R. drawbridge and return. The race and the first championship in the class went to Bernie Truitt's Woof of the Island Heights Yacht Club but the outcome resulted in a roar of protest which, although waived by the officials at that time, led to a radical revision of the rules for the following and all subsequent seasons. The row was due to the fact that Woof entered the race with a special Perrine sail of lighter texture and finer cut, and claimed to be of larger area, although this was disputed. Regardless of the merits of the case, Woof walked off with the race, lapped the fleet and finished with some ten minutes to spare and nobody second.

When the racing regulations for the 15-foot class appeared for 1923 it was evident that the Barnegat Bay Yacht Racing Association had taken a step of a radical nature. The fleet was divided into two classes, A and B, the determinant being a combination of two factors, ages of skipper and crew, and weight of sail. Class B included boats using "sails of 6 ounce material and over, of cotton drill, and for Captains and crews who have not yet reached the age of seventeen years at the first point race of the season"; while in Class A there was no age limit and sails were restricted to a material not lighter than 4½ ounces. In each case the sail-area was limited to a maximum of 165 square feet.

When these regulations were announced, the Class A skippers went to Burrows, Ratsey, and Perrine, and when the season opened the class showed some exceptionally finely cut sails, which so materially increased the speed of the boats that those using the original canvas were effectively outclassed. Ever since that time the Class A 15-footers have provided faster racing, but, to be sure, a more expensive sport. On the other hand, it may be said that the new rule dividing the fleet was a distinct encouragement to the younger sailors in that it placed their seniors in another class. So far as real junior racing was concerned, the rule proved a success and youngsters from ten years of age upwards were a common sight at the tillers of these sneak boxes, serenely reporting their entries, sailing their courses, and taking the gun at the finish with a nonchalance equalled by their poise in subsequently proudly receiving their cups.

Island Heights, N. J., Pier on a Junior Race Day

Boats tied up are 15-foot sneak boxes, bilge-board scows and one 20-foot sneak box with the high mast

That since that time, with all the youngsters afloat on Barnegat, there has never occurred a serious accident, speaks volumes for the wisdom of the officials in judiciously selecting courses and efficiently attending to the patrol of the same. Jersey's puffy and freaky summer breezes are particularly conducive to capsizing, a feat limited neither to junior yachtsmen nor to the 15-foot sneak box class, as any Barnegat skipper well knows.

Fifteen-foot Sneak Box, Cat Rigged

While the interclub rivalry produced bitter struggles in the junior races, the spirit and sportsmanship of the young skippers has always been of the highest. One incident I have in mind is illustrative. During the summer of 1924 in one of the races held by the Island Height Yacht Club the course took the 15-footers from the buoy off the clubhouse, down the river, around Good Luck Point Barrel and return, twice around. On this occasion a stiff breeze and heavy sea had dislodged the Good Luck buoy (unknown to the committee), and when the leading boats arrived at the place where it should have been, it was nowhere in sight. By mutual agreement the leading boats rounded a channel marker, those trailing behind did likewise, and what could have been an embarrassing situation was converted into a tense and tight race by the tact and good sportsmanship of all concerned. That the contest went into the official records, and was never protested, despite the fact that several of the leaders had lost valuable ground and their positions in the race through hunting for the buoy, is an indication of the practical sportsmanship of Barnegat's junior yachtsmen.

During the summer of 1923 from forty to fifty of the junior skippers were regular entries, with many more participating as the spirit moved them. About twenty-five sailed in Class B while twenty was the usual number in the senior division. Seasonal honors went to F. Slade Dale's C-U-Later in Class A, and to A. Hirst's Shufly in Class B, both of the Bay Head Yacht Club.

From that time to the present the racing entries of the small sneak boxes in the Barnegat Bay Yacht Racing Association weekly events at the various clubs have remained relatively constant in size. The fleet on the bay is steadily growing, however, and weekly events held by the clubs themselves have produced a constantly increasing number of adept young skippers. The Bay Head and Mantoloking Clubs are at present the leaders in this direction and the up-bay fleets race twice a week, with the result that in the Barnegat Bay Yacht Racing Association events these yacht clubs have taken premier honors, particularly in Class B. In 1924 Ted Bates' Heron of Mantoloking, took the title, while for the two ensuing seasons the winners have been C. Dunbar's Tip Top and Goodall's Shufly of the Bay Head Yacht Club.

For the 1924 season an enthusiastic participant in the 15-foot class was obtained when the Ocean Gate Yacht Club was admitted to the Barnegat Bay Yacht Racing Association. This organization has been materially active in promoting junior racing on the Lower Bay, especially in Class A. While Slade Dale's C-U-Later again took the title in 1924, the Ocean Gate skippers since that time have monopolized honors, with Dilworth's Bohunk and Jeffries' Squidunk finishing first and second respectively

in 1925, and the latter winning the coveted seasonal championship for the summer of 1926.

The remarkable success of junior racing on Barnegat is due more to the 15-foot sneak box than to any other single factor. Designed and manufactured by J. H. Perrine at Barnegat, selling for a mere $225, these boats are 15 feet overall, 13 feet on the waterline, with a 6-inch draught and a 5-foot, 9-inch beam. The boat completely equipped weighs about 400 pounds. There are over 150 of these sneakboxes in north Jersey waters, and, with the exception of a fleet of 25 purchased by members of the Seaside Park Yacht Club from Eli Townsend, are all from Perrine's shop at Barnegat. The Barnegat Bay Yacht Racing Association handbook restricts racing in this class to the standard boat of these two builders. That within a period of five years the class has reached its present proportions is indicative of the ableness, speed, ease in handling, and simplicity of the 15-foot sneak box. The safety of these craft cannot be overemphasized, as one or two serious accidents would have ruined junior racing on the bay. As it is, a record of absolute safety, with five years of racing in all kinds of weather, all types of courses, by mere youngsters and extremely inexperienced skippers, is a record to be proud of. To the writer's knowledge no other yachting centre in the country has a fleet of juniors sailing in any way comparable in point of numbers with that regularly on exhibition on Barnegat.

FIFTEEN-FOOT SNEAK BOXES, MARCONI RIGGED

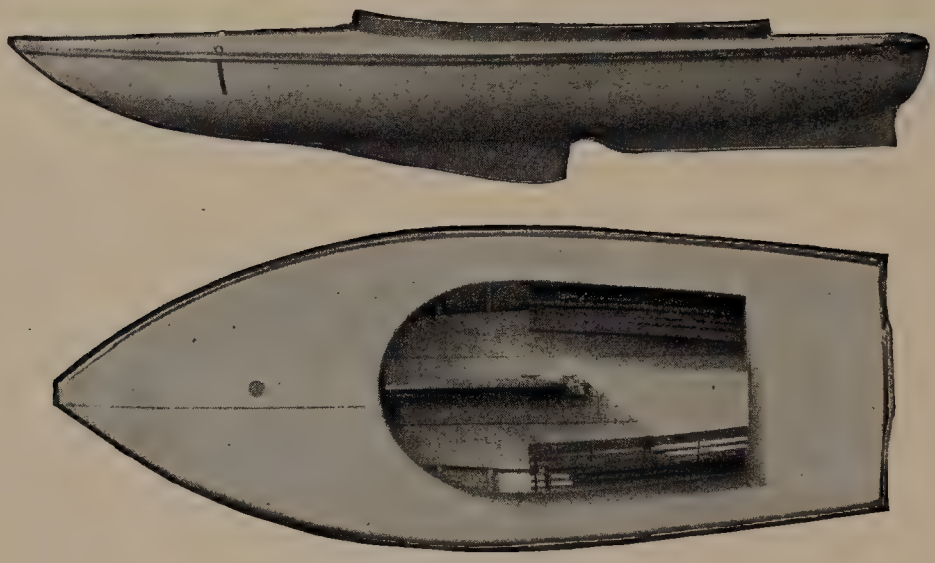
The courses of the Bay Head and Mantoloking Clubs are

particularly well-protected and natural racing grounds for the young skippers. The sheltered character of these courses has been an important factor in the predominance of these clubs in junior racing. While the open water of the Seaside Park course has aided racing in the larger classes it has, at the same time, hindered the activities of the younger sailors. Inasmuch as the Island Heights and Ocean Gate Clubs use this portion of the bay as part of their regular racing course, depending on the wind, they are to a lesser extent similarly handicapped. For the waters between the railroad bridge at Seaside Park and the auto bridge at Seaside Heights are often so lively as to make junior sneak box racing uncomfortable, if not actually unsafe, for the younger skippers. For this reason the junior activities in these waters have not flourished to the extent that they have in the Upper Bay, and the sailors from these clubs have often been handicapped by an insufficient number of suitable practice sailing days prior to interclub races in which to experiment with their boats.

A move made by the Barnegat Bay Yacht Racing Association in 1925 has helped alleviate the weather conditions in the southern part of the bay; although I fear that all this attention may convey the impression that weekly tornadoes are the rule, whereas the racing courses are never unnavigable and to my knowledge a race has never been called off because of heavy weather, except for the annual events held off Cedar Creek Point in the Lower Bay. However, the action taken by the Barnegat Bay Yacht Racing Association to which I refer was an alteration in the racing schedule, by which the junior sneak box events were scheduled in the morning instead of in the afternoon, as they had previously been staged in Class A. As Barnegat's typical breezy weather and heavy seas usually spring up about noontime, if at all, by holding all junior racing in the morning an absolutely safe course is assured, and one which will not put too severe a strain on either the boats or their crews—although it must be emphasized that neither have in the past shown any inclination to flinch under unfavorable conditions.

Where yacht clubs elsewhere in the country have often established junior racing through an actual training or instruction

course, on Barnegat the only school for the young skippers has been one of actual experience. When it is realized that some forty entries weekly over a series of eight or ten races involves a hundred odd juniors, it is evident that the lack of any organized training has not hindered the young sailors. When it becomes further apparent that these youngsters grow out of the small sneak boxes and into the larger classes and often take more than their share of the major honors there, then comes the realization that perhaps after all the most thorough training to be had is that which comes as a result of expanded effort and not pampered



FIFTEEN FOOT SNEAK BOXES

nursing. If it is argued that the lack of definite instruction may result in inexperienced juniors biting off more than they can chew, with a resultant possibility of accidents or mishaps, the best answer is Barnegat's record of a perfectly clean slate. While the lack of any organized system might be fraught with dangers elsewhere, as far as results are any criterion of success the Barnegat Bay Yacht Racing Association school of laissez faire has certainly justified itself.

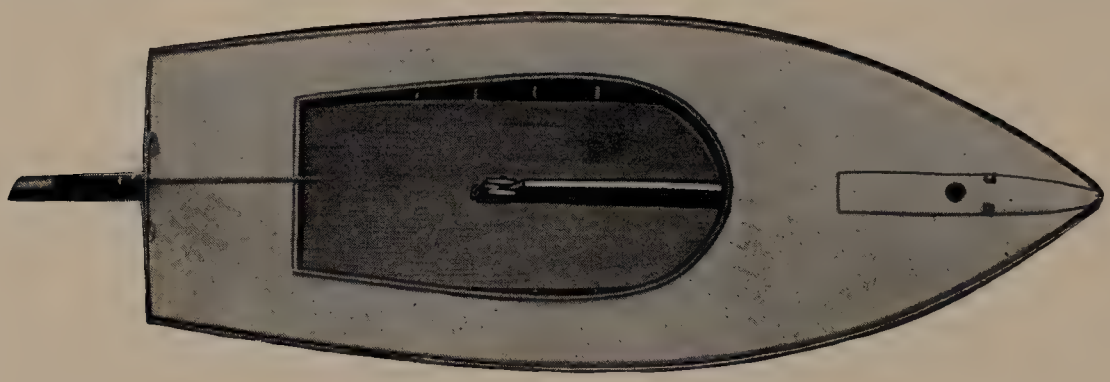
In connection with junior racing on Jersey waters the matter of night races deserves at least passing attention. Although not sanctioned by the Barnegat Bay Yacht Racing Association, short

evening races have occasionally been held for the 15-footers on the Lower Bay. The Seaside Park and Island Heights Yacht Clubs both have held night events, which, although not restricted to juniors, have usually been won by the younger skippers because of their long familiarity with their boats. Racing from Seaside Park to Island Heights and return, by moonlight, with the gentle, fascinating evening breezes has a peculiar attraction, and although the events are not without some elements of danger, past races of this type have proven successful in every way, and in that they are (as far as the writer knows) peculiar to Barnegat they are worthy of some attention. At best they are informal affairs, often gotten up on the spur of the moment, and without any particular prize or racing restrictions attached.

An annual affair for junior skippers on the bay, which is also unique to Jersey yachting, is the Grover Consolation Race, held annually on Labor Day on the triangular course of the Seaside Park Yacht Club. For the past five years this event, originated by Vice Commodore Clifford M. Grover of this club, has attracted approximately forty sneak boxes. The entries are limited to those skippers not having won a race during the season and, in accordance with the Barnegat Bay Yacht Racing Association rules, the contest is staged under the two divisions of Classes A and B. That the entries in other interclub races have occasionally shrunk while annually the turnout for this event is constant year in and year out, in all kinds of weather, is a sign that it has succeeded in its object of encouraging the youngsters to keep trying. Not uncommon is it that a series of unlucky breaks deprives a junior skipper of his due honors during the season. It is to encourage persistence and compensate for the summer's disappointments that this post-season event has been annually held, and if entry lists are any measure of success the object has been attained.

But, most of all, the weekly entries from one season to another reveal the success of junior sailing on Barnegat Bay. Despite the ever increasing number of youngsters graduating into the larger classes, the junior ranks are annually filled by newcomers, and each succeeding season sees previous popularity eclipsed.

At present it can no longer be said that junior racing is confined to the 15-foot classes, for the past summers have seen the widening of activities to the Class E sloops and the 18-foot catboats. While the 15-footers will remain the chief field for junior racing, the overflow is rapidly being taken by these two new classes, and it is safe to predict that the latter has only begun to reach its full popularity. Despite its higher first cost, it seems probable, as the years roll by and the present 15-foot sneak box class becomes unfit for the strains of a long racing season due to old age, that



Fifteen-foot Sneak Boxes

the 18-foot catboats, more familiarly known as the Atlantic City cats, will rapidly increase in numbers, until they have supplanted their predecessors.

In conclusion, it is important to keep in mind, in connection with junior yacht racing in the United States, that Barnegat Bay saw some pioneer activity in this field, that the shallowness and safety of its waters, coupled with a large fleet of inexpensive, adaptable craft and judicious supervision by officials of the Barnegat Bay Yacht Racing Association, have produced large numbers of skillful clever young skippers, promoting true sportsmen in every sense of the word, and in keeping with the highest traditions of generations of American yachtsmen.

Editor's Note.—Mr. Lucke, Jr., is one of Barnegat Bay's better known younger sailors. Since the age of fourteen years he has sailed in all well-known small boat races and has always

been found near the front of the fleet at the finish line. Many junior activities are due to his work and his enthusiasm. For some years past Mr. Lucke's name has appeared at the top of many well-written magazine articles on the subject of boats and sailing. His paper dealing with boyish activities on Barnegat must of necessity confine its descriptions to the most popular type in use there, the 15-foot Barnegat Bay sneak box.

These boats are built by Perrine at Barnegat, New Jersey, and are about as fine and tender a little craft as was ever built for boys to sail. They are delicate on the helm, and "tricky" under all conditions. Anyone getting results from them may consider himself well qualified to get something from any small sailboat in existence.

During the two years following 1920, these were well tested in the landlocked waters of Bay Head. The enthusiasm of the owners, and the keen competition which resulted, induced sailors at other clubs to order boats. As a consequence, members of the clubs at Island Heights, Seaside Park, Lavalette, Ocean Gate, Pine Beach, and Beachwood placed orders.

In the spring of 1922, forty or more were built, some by Perrine and others by Townsend of Seaside Park. The designs were very similar, but were not entirely restricted. The fleet from Beachwood Club was notable for its colored sails.

It is interesting to recall that Mr. Perrine, the present best known builder of 15-foot sneak boxes, is of the third generation of boat-builders of the same name to have followed up this work; in fact, it is said that the second boat of this type to have been built in America was constructed by the first of the Perrines in 1836 at Barnegat, New Jersey. One member of the Perrine family, a lady, possessing a love for antiques and especially of those that have some association with her family, bought a much-worn sneak box that was built by the elder Perrine and which had survived eighty years of use. This interesting relic is stored in a barn at Barnegat, New Jersey, and is a historical piece.

The class of 15-foot sneak boxes is one of the largest classes of one-design boats ever developed. There are about 750 of them used today in all parts of the world. They are used in

shallow and deep waters with equal success. While the boats have been very successful, some changes should be made in their design. They are too easily capsized. Having so little bearing at the bow, they are tender. When sailing them with "eased sheet" in a following wind and sea, it is almost impossible to take care of a heavy puff of wind. To ease the sheet or to bring them up into the wind, means disaster. Their very tenderness, however, makes them capital boats for the beginner.

At the close of the racing season the young skippers use these tiny boats for cruising. I have borrowed the following from a letter written some years ago by one of my own boys then about fourteen years of age:

"One Fall morning we set out in quest of a cove. The breeze was gentle and all serene. There were eight boats with two boys in each. Having my brother, who is my best crew, I felt very much at home. After about a three hours' run, we found our anchorage and moored our boats close to each other. We spent many hours in preparing our sleeping quarters for the night, and sat down and talked. The sun was now setting and the water was like a mirror. The smell of cooking from the other boats helped to remind us that it was time for supper. It was the best meal we ever tasted, because we had been looking forward to it all day. We spent a good bit of the night in paying visits to the other boats and then 'turned in.'

"Next morning after our dip and breakfast, we set out to explore the little channels which drained into our harbor. We weaved in and out of the lagoons and islands to find an outlet to the other side of the harbor. Every minute had its thrill, and every experience was an adventure. After dinner we sailed for home to tell the story of our cruise and to try to make arrangements for another."

Too many middle-aged sailors with children of their own neglect to furnish the younger members of the family with boats suitable for children. If this note reaches some parents guilty of this neglect, it might be well to add that to purchase a 15-foot sneak box would cost less than $300.

THE JOY OF CRUISING

By W. E. Warrington

THE call of the open water is universal. The method of satisfaction, from the boy on his raft in a quarry hole to the King on his sea-going palace, is but a measure of the means available to answer the call. So boys and men build boats and go to sea, figuratively speaking, and satisfy their craving for adventure. Adventure is the essence of cruising; real adventure for those who undertake long cruises on the open sea; make-believe adventure, perhaps, for the many who cruise occasionally for rest and recreation.

In 1880 a group of smaller boat enthusiasts in England, who believed that cruising was a more accurate test of seamanship than racing, and who wished to encourage the development of the cruising type of yacht, founded the Royal Cruising Club. For over forty years they have fostered this branch of the sport, and their efforts have unquestionably borne fruit, for it is said that cruising is a national institution in Great Britain. Organized support, together with ample week-ends, and lengthy bank holidays, two other unique British institutions, made an excellent combination, for cruising does require time.

It was not until the winter of 1921–22 that a similar organization was founded on this side of the Atlantic. A number of yachtsmen interested in this branch of the sport, who "felt that cruising never had attained the position it deserved in a country so rich in sea-going tradition and whose natural advantages were so peculiarly favorable to cruising", organized the Cruising Club of America. The objects of the club, as stated in the constitution, are "to promote cruising by amateurs, to encourage the development of suitable types of cruising craft, to stimulate interest in seamanship navigation and handling of small vessels", and "to gather and keep on file all information which may be of as-

DETROIT

The remarkable boat built for Fleming Day. By sailing across the ocean in this boat, he was instrumental in encouraging ocean racing and trans-Atlantic sailing

sistance to members in cruising". Any amateur who has proven his ability to handle and navigate a yacht or small vessel, and has had sufficient cruising experience, is eligible to membership in the club.

Each year both of the clubs award a prize to the member who has made the best cruise, provided the judges are of the opinion that one of sufficient merit has been entered for competition. The Royal Cruising Club also makes two lesser awards for meritorious cruises. These honors are a reward for other virtues of boat and crew than speed. Length of cruise, treacherous waters traversed, good seamanship and skill in navigation, information gathered and recorded which may be of value to other cruisers, hardships withstood and difficulties overcome, are considered, and the award made to the one whose measure of all of these is greatest.

The Cruising Club of America also maintains moorings for the use of members at eight or ten harbors along that cruiser's paradise, the Atlantic Coast from New York to Maine, where safe anchorage may be had, and supplies and other service obtained.

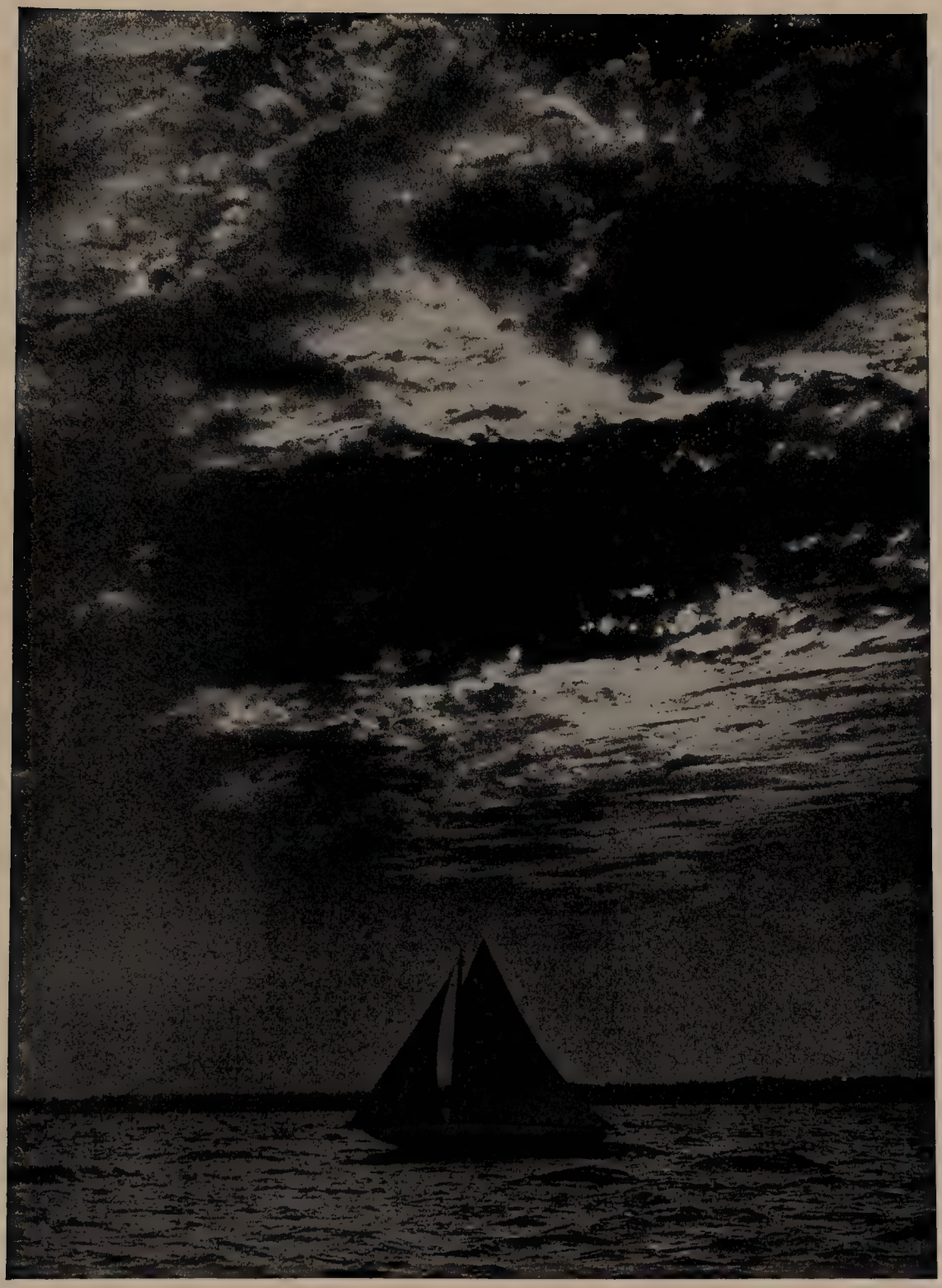
In recent years the most astounding voyages and exploits of navigation have been made in the air. The conquests of Lindbergh, Byrd, and Amundsen will go down in history as glorious accomplishments equal to those of any of the voyageurs of the days when much of the earth's surface was unknown. Still there are sailors whose feats of courage and endurance suffer little by comparison with those of the men here mentioned. The members of the Cruising Club of America decided in 1923 that their organization was a fitting one to record and reward such outstanding adventure upon the sea in small boats. The Blue Water Medal was founded in that year, to be awarded annually, at the discretion of the Board of Governors, "for the year's most meritorious example of seamanship, the recipient to be selected from among the amateurs of all the nations". Three of these medals have been awarded. It was a fitting coincidence that there should have been accomplished in 1923 a voyage of such outstanding merit that no difficulty was encountered in making a selection for the honor of the first medal. Alain J. Gerbault, a French-

man, sailed single-handed his 35-foot cutter Firecrest, from Gibraltar to New York. On June 7th he left Gibraltar, and on September 15th, just 100 days later, he dropped anchor off Fort Totten, at Whitestone, Long Island. Not another vessel was sighted for eighty-three days of the voyage, which was beset with difficulties that only a superb sailor and a man of limitless determination could have overcome.

The following year the Blue Water Medal was awarded to a Dane, Axel Ingwersen, who, with two fellow-countrymen, completed a voyage from Shanghai, China, to Copenhagen in a 47-foot auxiliary Ketch. From Shanghai, the original crew of six sailed to the Dutch East Indies. There three of them bade farewell, and started for Denmark by steamer. Ingwersen and his two remaining companions sailed on, across the Indian Ocean, around the Cape of Good Hope, and up the west coast of Africa. They called at a number of ports, crossed the equator twice, and sailed some 16,000 miles during their fourteen months' voyage. They had designed their own boat, the Shanghai, and had her built by native labor in China.

The third and last Blue Water Medal to be awarded was for the year 1925, and went to Harry Pidgeon of California. On October 31st, 1925, he completed, single-handed, a 35,000-mile voyage around the world in the Islander, a 34-foot yawl, which he alone had built. The Islander's only motive power was her 634 feet of working canvas, and Pidgeon had made one of her two suits of sails. He was not a sea-faring man, but an amateur sailor, a native of Iowa, who had dreamed of the voyage, at least as far as the South Sea Islands, for forty years. Pidgeon's voyage, which required something over 1,441 days, was a masterpiece of single-handed navigation. Because of its length and the great variety of conditions encountered and difficulties overcome, the entire voyage being in strange waters, this achievement will not suffer by comparison with any voyage in the history of navigation.

The supreme accomplishment in every human activity will always command the high awards. The hero is entitled to the laurel wreath and public acclaim. Just as the enthusiastic duffer



One of the Joys of Cruising

at golf or tennis worships a Jones or a Tilden, so does the occasional sailor, the class which includes most of us, thrill with admiration for those whose log books contain such glistening records as are here outlined. But most of us could not, or would not undertake a similar voyage. For every fifty who go on long ocean cruises, there are 50,000 who go on short ones. To many thousands, who prefer cruising to racing, the ocean's wide expanse is a closed book. To them the shore line may never be quite out of sight, and bottom but a few fathoms beneath the keel. Their bays and harbors are the seven seas, the opposite shore a foreign land, with rich adventure just a few hours' sail from home. My idea of a cruise may not be yours, and therein lies one of its greatest joys, for we may take it as we like it.

It has been my privilege and pleasure to know the editor of this book for perhaps ten years, and to have cruised with him and his sons upon frequent occasions. In fact, my idea as to what constitutes a good cruise—that glow of happiness that fills my mind at the thought of cruising—is a memory of those journeys in their company, on Barnegat Bay. To my way of thinking, the companionship of kindred spirits is the first essential. Cruising single-handed is the exception, not the rule. Most of us could not live with ourselves in peace for twenty-four hours, and a 100 days would drive us mad. A crew of five, perhaps, with two or three youngsters to shame us into turning out at crack of dawn with the shrill cry, "last man overboard is a lily-livered land lubber", is about right. Not to take a dare from a keen and active youngster—that's a bit of adventure for you. And even though your heart skips two beats at the thought of that icy plunge, and you think lovingly of the warm blankets so rudely thrown aside, don't hesitate, for if you do, you are not one of the gang.

Every cruise should have a plan. If the plan is made in advance, so much the better, for the joy of anticipation is no less real than the actual accomplishment; in fact the greatest satisfaction is had when each day's log checks with the plan. Where only a few days are available, a cruise without a plan too often degenerates into an aimless loafing party. The only satisfaction

A Fine Little Model for Cruising

in such a case is the return to port, when each one goes his own way.

The skipper serves in the dual capacity of director general and host. As Captain he assigns the tasks, and gently but persistently insists upon discipline. A clean and orderly ship is a joy to behold and to live upon, and the Captain is responsible for her condition. His duties as host are no less exacting. He sees to the comfort and pleasure of his crew, makes every reasonable effort to have his plans fit in with their desires, and—especially if they are inexperienced—he must assign the tasks on board to fit their aptitudes and ability. On a small boat cruise there are no deadheads. Each member of the crew must work his passage, and if the wrong man tends sheet the day's run may not be made. If an enthusiastic but hopeless cook attempts to wield skillet and saucepan, the rest of the crew may be justified in swimming ashore and walking home, if they do not cut him adrift in the tender.

There is no recreation that I know of which easily provides such a complete change in environment. The breeze which carries you away from the sweltering city with its din and commotion, both cools the brow and clears the mind. No clamoring telephones can reach you now, no compelling salesman can corner you and pin your reluctant mind to his proposition. There are no appointments to keep save your anchorage by sundown, and you are on your way with a freshening breeze and lifted sheet.

If some of you who read these lines have raced to Bermuda, or crossed the "big pond" in a small boat, or subjected yourselves to the rigors of other long sea voyages, you may smile disdainfully at the writer's joy in mild meanderings on inland waters. You may if you wish, for I say again, my idea of a cruise may not be yours, and the greatest joy of cruising is this—you may take it as you like it.

CRUISING NEW YORK TO MAINE

By Cornelius Vanderbilt, Jr.

NEW ENGLAND'S coast has made that part of our country a most popular cruising ground for yachtsmen. Its varied beauty, with low hills on the southwest, rugged promontories to the northeast, and frequent harbors, many of them carrying historic and romantic interest, and the numerous summer colonies, have made of it an especially interesting region for those who go down to the sea in modern craft with marine motor either as the main source of power or as an auxiliary to sail.

Coastwise navigation along the 500 miles between New York harbor and the Passamaquoddy, however, calls for some study, and is not to be undertaken lightly nor indiscreetly. Fortunately the government has been furnishing the necessary adjuncts to safe voyaging for more than a century, and today, large-scale charts and explicit directions from two volumes of the *Coast Pilot* are available at small cost, and no navigator, amateur or professional, pushes off for any lengthy run without a complete set in his locker.

The broad reaches and outlaying headlands are all well lighted, and the inland channels frequently buoyed, and the skipper of the yacht that fetches up on a ledge or shoal has to make it pretty clear to the insurance company that ordinary care was used by competent helmsmen. Yet even the most trustworthy commander occasionally goes astray, as did the captain of a $400,000 motor boat in August, 1927, when he ran his palatial craft on the rocks of Great Duck Island off Mt. Desert through mistaking the fog signal for that on Mt. Desert Rock ten miles away. The iron bones of the yacht were left to rust away while the owner doubled the amount received from the insurance company, and built himself a million-dollar craft the next year.

For years all coasting skippers bound down east from New

THE GREAT ATLANTIC SAILING HARBORS FROM CHESAPEAKE TO PORTSMOUTH, NEW HAMPSHIRE

York made their departure from Whitestone, at the eastern end of East River, and with a fair wind from the westward headed down Long Island Sound, for eighty-five miles of straight running to where it narrows at what is known as The Race.

To starboard roll up the green hills of Hempstead, while to port are the lower outlines of Westchester. Execution Rock, whose stumpy light is the seal of the Larchmont Yacht Club, forms an excellent point from which to lay a course at night or in thick weather for Stratford Shoal Light, 32 miles nearly due east. The Sound is broad and deep with a two-knot tide one way or the other, but a sharp lookout must be kept for traffic, especially tows and steamers.

Passing Stratford Shoal, which is nearly in the middle of the fairway, the course is still clear to the Cornfield Lightship, 26 miles along, with Faulkner's Light on one hand and Eaton's Neck, well astern on the other.

From the Cornfield to Race Rock is 17 miles and as the Sound narrows to a 4-mile gut between Fisher's Island and Little Gull, the tide increases in speed and if the wind be light the motor will have to be started, if the current is ahead.

Once through the race, however, the broad waters of Block Island Sound spread out, and it is clear sailing for miles. But the yachtsman must be fairly sure of his weather, for there are few harbors from a southerly or easterly blow except the Great Salt Pond with its narrow entrance on the west side of Block Island; while Point Judith, 26 miles ahead, has long been famous for its tempestuous greetings. The shore of South County, as the southern part of Rhode Island is known, has a few shoal inlets and there is a breakwater at Point Judith which has sheltered many a storm-beaten coaster.

In ordinary weather, however, the whistler off "Pint Jude," as the little peninsula is known, can easily be rounded; and then it is but ten miles into Newport for one of the best harbors on the coast.

If this summer resort is left for another visit, the yachtsman must soon decide whether he will go through Cape Cod Canal or round the grim old Cape. The former is, of course, less hazard-

ous, but the other is more picturesque and romantic. As the wind is usually astern in the summer time the long trip 'round the Cape is quite popular, and Vineyard Sound Lightship, old Sow & Pigs and the ledges of Cuttyhunk are left on the port hand. Off to starboard loom the gorgeous cliffs of Gay Head, the most colorful bit of scenery on the coast, whose clay banks are unbelievedly vivid with reds, greens, purples, and shining white.

There is a popular legend that the Old Man gave one of the islands to Martha, those on the other side to Elizabeth, and there was only a small one left—so Nan took it. As a matter of fact, the large island was named for Martin Wyngard, an early Dutch navigator, while the islands were, of course, called after the Virgin Queen of England by Bartholemew Gosnold; and they have for years comprised a Massachusetts town incorporated under the name of the old sea captain, who in those early days before had caught a "grate storre of codde" off the Cape, which has ever after borne that designation.

The course up Vineyard Sound needs to be negotiated with some care, for there are shoals on the right hand and holes on the left—like Robinson's, Quick's, and Wood's—while Vineyard Haven, one of the big shipping rest stations on the coast, was long known as Holmes Hole. The white light on West Chop is an easy guide into the deep Haven, and if the yacht is a small or medium-sized affair a good anchorage will be found under the breakwater at the head of the harbor.

It is well to make an early start the next day if the Cape is to be doubled during daylight hours. Navigation is also difficult, with sandy shoal on all sides of a comparatively narrow channel. But after rounding East Chop a departure can be taken from the Hedge Fence Lightship, and it is only a short run to Cross Rip Lightship and eleven miles farther to the entrance of the curving channel over the shoals off Monomoy Point. First comes the Handkerchief Lightship, then the Shovelfull and finally Pollock Rip and its famous Slue, where the channels seem actually to slue round from east to due north.

We are now on the graveyard of the Atlantic. Thousands of good ships have been wrecked in the waters off Cape Cod or on

NOR'EASTER

Sixty-five feet overall; 52 feet load waterline. A distinctly virile type of major yacht and a good cruiser

its seemingly yielding but actually tenacious sands, beginning with the Sparrowhawk only six years after the Mayflower dodged into Provincetown. It was in the Pollock Rip Slue that the big sloop Independence, which carried the cup defending hopes of Thomas W. Lawson, was so buffeted by a southwester that she sprang a leak and was never after able to show her best form.

Except for a lee under Monomoy Point, in heavy northeast blows, there is no harbor for any boat, except a skiff, for nearly a hundred miles. In fact, the Cape has to be well-nigh rounded before the finger of Provincetown is gained. Highland Light, which is perched on the highlands on the wrist of the Cape, has looked down on more death and suffering than any beacon in the world. It was formerly a fixed white light, but it now flashes every five seconds. Six miles to the northwest a whistling buoy warns from Peaked Hill Bars, on which three Salem ships were wrecked inside of an hour early in the last century, and it was here that the steamer, City of Portland, went down with all on board, 300 souls, in the November gale of 1898.

With such maritime menace strewn along the course, it was not surprising that most yachtsmen felt better in paying a few dollars tolls and patronizing the Cape Cod Canal, until the federal government threw it open to free passage in the spring of 1928.

The course from the entrance of Buzzard's Bay to the canal is well buoyed, with scarcely anything in the way of obstructions from Hen & Chickens Lightship to Wing's Neck, over 20 miles. The canal is well guarded, and posts and lights are frequent all the way through; but notification has to be sent ahead in order that the three drawbridges may raise their massive arms.

From the bell buoy off the eastern entrance at Sagamore the course is up the Plymouth shore, past the 400-foot Manomet Hills (which invited the Pilgrims across from Provincetown) and the little light on the Gurnet which guards the entrance to Plymouth harbor. Few yachts visit the historic haven, for the harbor is very shallow and the channel a narrow winding one. Still there is an unusually active racing colony at Duxbury, and another inside the long spit on the Plymouth side, while the tall

Photo by Levick

VANITIE

A beautiful picture of Mr. Gardner's most beautiful and speedy creation

monument to Captain Miles Standish, who first suggested the Cape Cod Canal, looms up in the background.

So the yacht keeps straight on for Marblehead and soon passes the gray tower of Minot's Light, rising up for a rocky ledge that is only bare at the lowest of tides. An iron frame lighthouse on spiles was washed away here in the April gale of 1851 and the two keepers were drowned. The present light has resisted hundreds of storms for three-quarters of a century.

Minot's was the first light using the present system of varied flashes to give it marked distinction from other lights. For twenty-five years it has sent forth first one flash, then four more followed by three others, so that every mariner knows what 1–4–3 means and gives the old ledges a wide berth.

On the starboard hand stands the tall Pilgrim monument at Provincetown, while across the bay the tower of Abbott Hall, the town house of Marblehead, has been a conspicuous landmark in Massachusetts Bay, until the 400-foot shaft of the Custom House in Boston claimed attention. The cruising yachtsman seldom goes up Boston Harbor nowadays, for Marblehead, with its three yacht clubs and great armada of pleasure craft, is too great an attraction.

Once at anchor off the Boston Yacht Club on the town side of Marblehead Harbor all hands usually go ashore, either to run up to Boston to see the Constitution and other historic shrines, or to visit the Peabody Museum with its wealth of marine relics at Salem.

Yachting and yacht racing is carried on more intensively at Marblehead than in any other port in the world. Nearly 300 boats are started in the open regattas in thirty-odd classes, while racing goes on nearly every day from mid-June to late September. In the thirty-three classes which were represented in the regattas of 1927, all but two were of the one-design variety.

Breaking loose from so many allurements, the yacht winds her way through the islands of outer Salem Harbor, past the red ledges of Norman's Woe, which Longfellow immortalized in his *Wreck of the Hesperus*, and finds a snug anchorage inside of Ten Pound Island and off the pungent fish wharves of Gloucester.

Once ashore, the visitor naturally strolls up to the rooms of the Chamber of Commerce where the talk is nothing but fish and fishermen. Connolly has told their story better than any other writer, especially those races with Nova Scotia fishermen for the championship of the North Atlantic.

Starting out again and round old Mother Ann, the yacht leaves the gray twin lights of Thacher's and heads across Ipswich Bay for Portsmouth, a good day's run, stopping perhaps for an hour or two at the Isles of Shoals, which Captain John Smith discovered and which for a century bore his name. The light at the southwestern isle flashes red and white alternately.

Among the picturesque features of the New England coast are its high hills not far from shore. Manomet at Plymouth has just been mentioned, and the east-bound voyager heading across Ipswich Bay for Portsmouth sees another round nob looming up on the northern horizon, Mount Agamentacus, 439 feet high, back of York. The little yacht heads for it until the red lighthouse on Whale Back at the entrance to Portsmouth is in clear view. There is a good harbor on the Newcastle side of the entrance behind the ruins of old Fort Constitution. The tide runs fast up and down the Piscataqua, and while the chugging motor has robbed "Pull and be Damned" Point of many of its hardships, the current still tests the yacht just as the designation of the famous point still appears on the government chart.

It is a half a day's run to Portland for the ordinary yacht, provided it does not linger on Boon Island Ledge for a mess of cod or haddock, or spend a day with the summer colony and such noted writers as Booth Tarkington and Kenneth Roberts at Kennebunkport. Biddeford Pool is also attractive, and Wood Island clams are said to be the most succulent on the coast.

But Cape Elizabeth beckons and after threading its grim ledges, Old Anthony, Hue, and Cry, and half a dozen others, the yacht swings past Portland Head Light (which probably has been photographed more than any light on the coast) and after rounding the breakwater in the inner harbor, drops anchor off the new station of the Portland Yacht Club, where a cordial welcome awaits at all times.

SOUTHERN CALIFORNIA YACHTING

By Edson B. Schock

WEIGHING anchor anywhere along the southwest coast of these United States is a deep-sea venture from the start. The minute you shove off you are at sea. Anywhere along the golden strand of movie-land taking a cruise means going to sea. The Southern California yachtsman has no land-sheltered coastal waters in which to dawdle or frolic, no "inland waterway" such as provides a peaceable corridor behind a wall of sandbars along the Atlantic from Maine almost to Florida. Inlets, bays, breakwaters, and even good harbors are scarce. Water is very plentiful. The well-known Pacific Ocean is the yachtsman's pond and stepping off of the clubhouse porch automatically turns a rocking-chair yachtsman into a sea-going skipper.

The cruising waters lie between the mainland and the Santa Barbara Islands and thence eastward. The coast line from Point Conception almost to San Diego is more west to east than north to south. This will be a shock to most Atlantic Coast mariners. The course from San Pedro breakwater to San Diego is S. E. ¾ E., while the course to Santa Barbara is about W. N. ½ N.

The Channel Islands, about five in number, lie across the Santa Barbara Channel from the mainland. San Miguel is the most westerly, and Anacapa is the eastern limit, with Santa Rosa, Santa Cruz, and Prince's Island in between.

Going east, or rather southeast, there is then a wide gap be-

tween Anacapa and Santa Barbara Island, which is nothing but a barren rock sticking its nose out of the brine about 45 miles offshore. Santa Catalina is 20 miles from Los Angeles Harbor; then comes San Clemente, about 40 miles off; San Nicholas, some 70 miles away; and finally the Los Coronados Islands, in Mexican waters.

The distance from San Miguel, on the west, to the Coronados is about 200 miles and this strip of ocean, about two-thirds of its way open to the wide Pacific without shelter, forms the South-

MAP OF THE PACIFIC COAST AROUND LOS ANGELES

ern California "pond". On the map these waters are called the Santa Barbara Channel, the San Pedro Channel, etc., but the islands are about from 20 to 50 miles offshore. Because of this immense distance and the wide gap between islands, they offer about as much shelter from the heavy storms blowing in from the Pacific as an umbrella in a hurricane, unless you snuggle up close to their lee side.

Yachting thus has its precarious side and the local skippers are careful to keep the islands between the open sea and themselves when there are signs of weather. Unless seeking thrills, it is bad business to venture outside. There are few harbors on

the windward shores and some of the isles are entirely uninhabited. Santa Barbara Island, for instance, is a busy spot, but only for birds. It is really just one huge rock and is no place at all to visit or to be blown upon by a squall. The birds use it for breeding grounds.

The boys also stay inside of San Clemente and the Coronados. These are rocks, like Barbara, but many times larger, and they are inhabited by man—lobster and abalone fishermen and sheep-grazers. The waters around these isles are alive with the Pacific lobster; a large crawfish, without claws. On the outside of San Clemente at certain seasons of the year you can see hordes of hair seals and sea-lions. But the rocky, harborless shoreline makes it a risky cruise to take for such sightseeing. Even if you like risks you need a pilot to get in, for there are several very bad reefs running out of it.

San Miguel, most westerly of the isles, is also no place to go. Few of the yachtsmen have ever been on San Miguel, and nobody more than once or twice. It is the windward island of the Santa Barbara group and it blows anywhere from a good, fresh breeze to a gale almost all the time. Naturally there is little or no vegetation, just a barren, windswept waste, and there is really nothing to take the cruising yachtsman there, unless he has lost an election bet or is willing to sweat with a pick and shovel all day long in the hope of digging up some Indian relics, which, of course, can be done.

Santa Rosa, next door, is bigger, but not much better. They use it for grazing sheep, but there is no dent in its inhospitable coast that could be called a harbor even by the Santa Rosa Chamber of Commerce, if they had such an organization.

San Nicholas, the remotest of the isles, included in the Southern California cruising radius, is utterly useless. The best way to plan San Nicholas is to use it for a bell-buoy, that is, turn around it and head back home. An even better play is to forget that it is there. Most Southern California yachtsmen follow this last system. Few of them have ever paid a call on "Saint Nick". It is furthest offshore of all the islands named. It is entirely uninhabited and a more desolate and forsaken place would take

MONSOON
Owned by T. H. & D. B. Ayres. Designed by Edson B. Schock

a lot of finding. If there is a harbor anywhere on its rim, nobody has found it yet. The wind never stops blowing and the surf runs so heavy that making a landing is next to impossible. Since there is nothing to make a landing for, San Nicholas is seldom disturbed in its eternal sleep in the arms of old King Pacific.

SCARAMOUCHE
Owned by George Vibert. Designed by Edson B. Schock

Scientists who have the Pacific under observation say that San Nicholas is gradually dwindling in size under the terrific beating it gets from the wind and surf sixty seconds every minute, twenty-four hours a day, and 365 days a year, to say nothing of leap-years. The sea and the winds are constantly eating away the rocks and a couple of hundred years from now readers of this article will probably doubt our geographical accuracy when they go looking for San Nicholas and can't find it. Some centuries

ago, before this eating had gone very far, San Nicholas must have been part of the mainland, very likely a suburb of prehistoric Los Angeles.

Thus, by elimination, there are just two islands worth visiting in yachts off the southwestern exposure of these United States,

R-12—ALOHA—Owned by George S. Gay
R-8 —DEBRA—Owned by S. M. Spalding
Designer (both)—Edson B. Schock

if you want as much pleasure as possible per knot. These two isles are real gems of the ocean and they are blessed with the good things the other islands lack.

Barring adventure-seeking souls, the yachting in Southern California is transacted almost entirely between the mainland and these two pearls. Santa Cruz is one of the five channel islands, and the only one with a running stream of fresh water. It is

well covered with luxuriant vegetation, including some fine big trees. Its harbor equipment is not perfect, however. There are quite a few fair harbors, but all more or less open to the sea. The only ones used with safety by the yachtsmen are those located on the lee shore, for which the island itself serves as breakwater.

Catalina has been so extensively advertised throughout the country by its owner as to need no introduction and little description. About 99% of the yachtsmen choose Catalina for the usual week-end trip, going over Saturday and home Sunday. The trip requires from three to five hours, depending on the wind, which is always ahead. Homeward-bound, when the breeze is good, takes only two and a half hours. Avalon, at the southeast end, is the chief harbor. Most sailors prefer the northwest end, where there are half a dozen fair harbors and one excellent haven, land-locked and sheltered from wind in any direction. The others are open anchorages, indentations in the coast line on the lee side. Most yachtsmen keep their boats in commission about nine months of the year, laying them up only from New Year's Day to about April first.

Despite the lack of coastal waters and sheltered inlets the prevailing types of boats are very much the same as are being developed on the Atlantic coast. Particularly interesting is a fleet of R-class sloops, the finest array to be found in any section of the country, except perhaps at Marblehead or along the Great Lakes. The rest are mainly auxiliary cruisers, with a few straight sail craft. The R-class sloop fleet was started in 1922 and at present includes eleven of these fast sailers, with speed enough to win out over yachts of the same class built in the east and shipped out to the coast. They are built for open ocean races and always stage a dash to the summer regattas. They have to be well-built and well-rigged. A beat of 80-odd miles in a good stiff breeze and a heavy sea most of the way is no idle summer sail.

These R's hold the record for finishing first among yachts, regardless of size. This year, 1927, Al Christie's new R, the Heather, established a new record, beating the time formerly made by Debra. The International Star class is well represented,

Schooner Ocean Waif

Owned by Smith and Angleman. Designed by H. Angleman

and growth of interest in this class was brisk this year because of the championship achieved by one of its members. Prospects for 1928 indicate about forty of them in commission by summer.

Some four years ago the Palos Verdes Estates put up a handsome trophy for a one-class race, schooners and yawls. The course was from San Pedro to and around Santa Catalina and

CYGNET
Owned by Paul E. Jeffers

San Clemente, making a strictly ocean race of about 130 miles. There were in addition three special cups for class prizes, dividing the yachts into three groups, under 45 feet overall; between 45 and 60; and above 60. As in most other parts of the world, the under-45 class took in most of the yachts, and it was this race and this classification that brought about, in the winter of 1926–27, the formation of what is known as the Southern California Forty-Five Foot Sailing Association. Its purpose was to promote

interest in a type of boat which would be comfortable to live in, which would be safe in ocean sailing, and which would cost, with the best of construction, not more than $15,000.

Since the formation of the Association four new yachts have been launched, also another one shipped from the east, and all are members of the Association. Four of these were schooners.

THE YAWL IS THE YACHT ALMARDINE II
Owned by G. C. Urlin. Designed by Edson B. Schock

The other, the Almardine II, is a yawl, which won the first championship staged by the Association. At present the Association's fleet includes ten schooners and six yawls. They range from 30 to 45 feet overall and only three are less than 40 feet, making a uniform array of sea-going craft. They are, as a rule, a generous beam and without exception the keel type. Centreboards in these waters are entirely unnecessary.

The depth of all waters is far above the comfortable anchoring limit. Anchor cables are extremely long on most boats, but not on all. It is nothing strange to see a yacht dragging her anchor. Between San Pedro and Catalina the depth reaches 300 fathoms, and 100 fathoms can be sounded within a mile of the island. These 45-footers are all well designed and well built. They have made good the test of sea-worthiness, else they would not be afloat. Four of the schooners have the modern staysail rig, the last word in schooner-rig designing as far as ease of handling is concerned.

Besides the short races, 20 miles or less, these 45-footers also behave beautifully in the long jaunts to the Southern California Association regattas, when held at Santa Barbara or San Diego. In either case, the distance is more than 60 miles, and when the goal is Santa Barbara (the city, of course, not the island), the going is all end on because of the prevailing westerly, or "trade", winds which blow all summer from the wide Pacific.

These little fellows can kick up the suds, too, for last summer the Lavolpe and the Monsoon finished among the R-class sloops, which have held the record from San Pedro to Santa Barbara since 1923.

EDITOR'S NOTE.—Mr. Schock, although now practicing his profession of marine architecture at Los Angeles, California, was born in Camden, New Jersey. Barnegat Bay presented to him, when a boy, the opportunity to learn sailing, and later the love for the sport induced him in 1899 to adopt boat designing as a life work. A. Cary Smith, one of America's foremost designers, was his first employer and this prized association gave Mr. Schock a good start and a background to be proud of.

After opening an office in New York, he received an assignment of work to be done at Vancouver, B. C., which led to his adopting the Pacific as his water on which to sail and in 1922 to Los Angeles as his home. The products of Mr. Schock's board have been successful contenders in all races; among the more prominent ones the following may be mentioned:

Berneyc: Winner of the Philadelphia–Havana race, 1400 miles.

Full Moon: Winner of the Tacoma–Vancouver race, 225 miles, 1912.

Irene II: Winner of Marblehead race, 315 miles, 1908, also fast time prize and all the Hudson-Fulton Celebration prizes for her class.

Minnehaha: Champion Chesapeake Bay, 1907.

Sis: Winner Marblehead race, 1906.

Hudie: Winner long-distance race Gulf of Mexico, 1907.

Ruth: Winner Block Island race, 115 miles, 1912.

Swastika: Winner Chicago–Mackinaw race, 325 miles, 1907.

Uandi: Winner Green Bay race, 320 miles and unbeaten champion, Lake Michigan, 1909.

Adelphi: Winner Lipton Cup.

Scaramouche: Champion Southern California, 1923–1924 and winner of long-distance race San Pedro–Santa Barbara, 1923, and San Pedro–San Diego, 1924.

Debra: Champion San Francisco Bay, 1924, Championship Southern California, 1925, Champion California Yacht Club, 1924, 1925, and winner of Lipton Cup, 1927.

Alcha: Champion San Diego Yacht Club, 1924 and winner Times Cup, 1925.

Monsoon: Champion Southern California, 1926 and winner of Catalina Island trophy, 1926, 1927.

Heather: Winner long-distance race San Pedro–Santa Barbara, 1927 and Championship California Yacht Club and Los Angeles Yacht Club, 1927.

Almardine II: Champion Southern California Forty-Five Foot Sailing Association, 1927.

The Pacific Coast sailing is different from that on the Atlantic seaboard, because the western coast is almost entirely without large inland waters. Not possessing a sailing history with its accompanying background, Los Angeles cannot boast of having possessed types of boats such as Sneak Boxes, Garveys, Buckeyes, and other work boats of which the east is so proud. For this reason the yachts sailed today comprise Star, R-boats, Yawls, Schooners, and other classes similar in measurement and rig to modern boats so popular elsewhere.

It is interesting to have Mr. Schock's paper, delightfully describing Los Angeles yachts and yachting, and a pleasure to pay tribute to an old friend, a fresh-water sailor of Barnegat Bay, and a successful designer.

MAINE AND NOVA SCOTIA RACING

By Edward W. Madeira

THE Bay of Fundy and the Gulf of Maine, formed by Maine and New Brunswick on the west and the Nova Scotian Peninsula on the east, has played an important part in the history of sailing. In the days when the proud clipper was queen of the seven seas, American and Canadian skippers and shipyards met in fierce competition, and the boat builders of Maine, New Brunswick, and Nova Scotia built ships which sailed to the farthest shores. It is not to be forgotten that the ship, Red Jacket, with her record of 13 days, 1 hour, and 25 minutes from Boston to Liverpool, the fastest run ever made, was built at Rockland, Maine. St. John, N. B., was at one time the fourth largest ship-building port in the world.

Today, with the general utilization of mechanical power for the propulsion of ships, sailing vessels are disappearing from commerce, making the steamer the universally recognized ocean carrier, with the internal-combustion motor being used more and more in the fishing industry. The proud tradition of the sailing vessel, and of skippers who drove their ships has singularly enough been kept alive by the yachtsman, not typified by a figure in white flannels reclining sumptuously in an armchair on the afterdeck of a steamer, but rather one in yellow oilskins clinging to the tiller of a sailing yacht, being driven into the teeth of a full-sail breeze. In these men there lives the spirit of those courageous hearts which drove the clippers into the westerly gales off the Horn.

The towering ships, with their cargoes of spices from the Indies, have given away to tiny pleasure craft; but both call for the same delicate touch on the wheel, and the necessity for the same quick decision which assists a vessel to obtain its utmost speed. The great square sails of the clippers have been succeeded by the

Bar Harbor Seventeen and One-half Foot Class

graceful curves of the towering modern rig; but the refinement of design of today is hardly greater than in the beautiful lines of the clippers of Donald McKay.

It is quite natural that with this tradition of the past, Maine and the shores of the Bay of Fundy should foster yachting. The rugged coast, with its bold water and scattered islands, jutting promontories and wave-washed ledges, offers an ideal cruising ground; and each year numbers of yachts skirt along the coast on modern voyages of adventure, seeking new spots of beauty and new anchorages, just as did Bartholomew Gosnold, the Sieur des Monts, Captain George Popham, and Captain John Smith in the early days of the 17th Century. The latter in describing his voyage of discovery along the coast of Maine in 1614 says of the shore:

"A coast all mountainous, with isles of high rocks overgrown with all sorts of excellent wood for houses, boats, barks, and ships. All the coast is such high craggy cliffs, rocks, stony isles, it is a wonder such great trees could grow upon so hard a foundation."

The coast (still resembling Smith's description) east from Portland provides sheltered passages, deep bays inviting exploration, and cozy anchorages, some wild and primitive, others completely civilized, with the intense civilization of popular summer resorts. Of especial interest is the St. John River, N. B., with 125 miles of cruising waters, which offers scenery of every variety, and above all a warmth of sunshine and brilliance of blue sky. Fog? Yes—but those who love the coast will argue that this fog comes in only that the blue sky and sunshine may be appreciated the more; for one hour's sunshine will drive away the memory of days of fog.

There are a number of ports, both Canadian and American, which are very active in that branch of yachting which has to do with racing of sailing yachts; with each having its own classes and courses, and its racing yachtsmen filled with the keen spirit of sportsmanship that is the freemasonry of the sea. An increasing effort is being made to bring together these various ports and

sailors, by means of interclub regattas and cruises in which many clubs participate.

Starting from the eastward, yacht clubs are located at Cape Breton Island,—the Royal Cape Breton Yacht Club at Sydney, and the Bras d'Or Yacht Club at Baddeck—but the first port at which there is an active interest in racing is Halifax, Nova Scotia, on the south shore of the Nova Scotia Peninsula. This is the home port of the Royal Nova Scotia Yacht Squadron, which organization, formed in 1875, is primarily a sailing club whose chief objective is to promote yacht building and sailing, and to encourage its members to become proficient in navigation and seamanship and in the personal management, control, and handling of yachts. Racing is confined largely to smaller yachts, the principal one being a one-design, known as the Star Class (not to be confused with the International Star Class) designed by W. J. Roue who designed the famous champion fishing schooner Bluenose. The yachts (six in number) are: 28 feet overall, 20 feet waterline, and 8 feet beam, of keel construction, rigged with gaff mainsails.

In addition, several other handicap classes are raced, composed of three yachts of Class P; one of Q; seven of R; four of Class S; and a number of schooners, ketches, besides miscellaneous craft.

Chester is located just west of Halifax, on Chester Bay, which is a large body of water protected from the North Atlantic Ocean by several large islands, with many islands located close to the shores of the mainland, leaving the centre of the bay clear for sailing. The Chester Yacht Club, which has flourished since the "nineties", was incorporated in 1925, thereby stimulating yachting. Each year seven regular events are held on Saturdays. There are three classes, totaling sixteen yachts, the first for yachts of 40 feet to 50 feet overall measurement, the second 27 feet to 37 feet, and the third 17 to 18 feet.

From Chester it is a long sail around the southern end of the Nova Scotian Peninsula and across the Bay of Fundy to St. John, New Brunswick, where the Royal Kennebecasis Yacht Club is located. This club has been active since its organization

MAINE—LOOKING ACROSS VALLEY COVE TO NORTHEAST HARBOR

in 1894, but during the war racing was discontinued and was not revived until 1923. The racing fleet consists of four boats in Class A of over 30 feet racing length; five in Class B of between 25 and 30 feet racing length; four in Class C of between 20 and 25 feet racing length; one Class P; one Class Q; three Class S; one 6-metre; one schooner and a yawl.

From St. John it is a pleasant run along the shore, past Campobello and Grand Manan to Winter Harbor, Maine, on the Schoodic Peninsula. Here the Winter Harbor Yacht Racing Association since 1907 has been a centre of keen interest in yachting. The season is very short, and races are held only during August on Frenchman's Bay, where tide and wind sometimes make the going bad. To meet these conditions the yachtsmen of Winter Harbor engaged Burgess to design a suitable craft, and eight were built. They are gaff-rigged knockabouts, 21 feet on the waterline, of keel construction, with moderate overhangs both forward and aft, and in more than twenty years' use have proved very fast, stiff, and able.

Further to the northward, Sorrento Yacht Club, on Frenchman's Bay, provides a more recent addition to the yachting world, where 13 Wee Scots are raced twice each week.

Bar Harbor, on the other side of Frenchman's Bay on Mount Desert Island, is perhaps the most famous of the resorts on the eastern part of the Atlantic Coast, and where for many years there has existed a spasmodic interest in yachting. In the old days many classes flourished, only to disappear; but in 1924, the Bar Harbor Yacht Club was revived, and since then interest in racing has developed. At present, the Bar Harbor Yacht Club members race in two classes, S and MDI.

There are seventeen yachts in Class S, from designs by Herreshoff, Marconi-rigged keel knockabouts, 27 feet, 6 inches overall, 20 feet, 6 inches waterline, and 8 feet beam. They are fast and sensitive and in many ways are the most delicate of all the one-design fleets, and there are a number of these yachts at various other points on the coast of Maine.

There are nine in Class MDI with the initials indicating Mount Desert Island. Organized in 1924 by Mr. Edsel B. Ford, for use

at Bar Harbor and at Seal Harbor, these yachts are high-sided, 17 feet keel knockabouts of Marconi rig from plans by Ralph E. Winslow.

Seal Harbor on the south side of Mount Desert Island, not far from Bar Harbor, is the home port of the Seal Harbor Yacht Club, which in 1924 was instrumental in organizing the MDI Class, although in the past few years it has conducted racing for this class in association with the Northeast Harbor fleet.

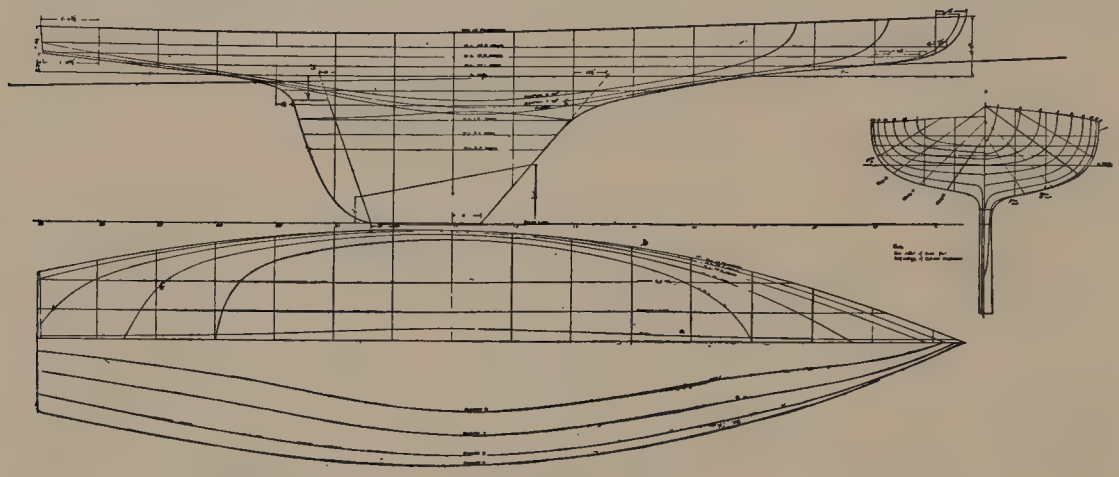
Northeast Harbor, likewise on the south shore of Mount Desert Island, is the next port to Seal Harbor. The Northeast Harbor fleet has built up an active interest in yacht racing among the summer owners there and at near-by harbors. For many years racing was popular, but in 1914 the present activity began and interest and enthusiasm has grown from year to year until now there are five recognized classes and nearly seventy yachts in the racing fleet. The season is, however, short. Two series of races are held, one in July and one in August, besides a number of special events.

The classes sailed at Northeast Harbor range from O to S. The former is composed of sixteen Class O yachts of Alden design, bluff-sided, centreboard knockabouts, rigged with Marconi mainsails, 18 feet, 3 inches overall, 15 feet, 3 inches waterline, and 6 feet, 3 inches beam. They are safe rather than fast, but have proved very satisfactory for use under the conditions encountered. The class has developed into one largely of ladies and children, and has become a training school and stepping-stone for the larger sized yachts. The next largest is Class MDI composed of three yachts of the Mount Desert Island Class, similar to those raced at Bar Harbor.

Larger than the MDI is the so-called Class B, of fifteen gaff-rigged keel knockabouts designed by Crowninshield. These yachts are 25 feet, 10 inches overall, and 17 feet, 6 inches waterline. This—which is essentially the same as the class known as the Manchester 17-footers, and those sailed at Dark Harbor and North Haven—has proved very satisfactory, and during 1927 the interest was so keen that almost every yacht was out in every race.

BAR HARBOR SEVENTEEN AND ONE-HALF FOOT CLASS

The most popular class at Northeast Harbor is the so-called Class A, composed of 33 gaff-rigged keel knockabouts designed by Edwin A. Boardman. This was organized in 1912 by the Eastern Yacht Club for use at Marblehead, but when some of the yachts came on the market in 1914 they were purchased by summer residents of Northeast Harbor. There has been such a demand for these yachts, that, in addition to sixteen of the original fleet from Marblehead, seventeen new yachts have been constructed from the original plans. They are 27 feet, 10 inches overall, 16 feet, 10 inches waterline, and 7 feet, 3 inches beam,



LINES—MASSACHUSETTS BAY EIGHTEEN-FOOT CLASS
Designed by Charles D. Mower

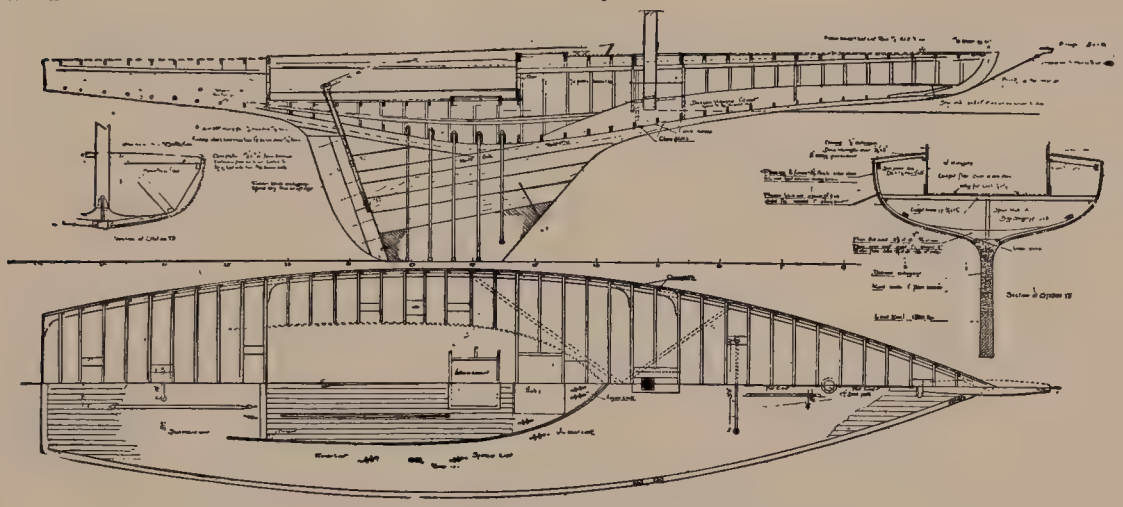
and are able and fast and used for extensive cruises along the coast in addition to racing.

Finally there are two yachts of Class S, similar in design and construction to the yachts of Class S in use at Bar Harbor.

The annual series of regular races is sailed in waters off the southern shore of Mount Desert Island which are sheltered by the outlying islands. In addition to the regular races there are special events, among which three should be mentioned. The race for the George Davenport Hayward Memorial Cup, given in memory of George Davenport Hayward, a former commodore of the fleet, is open to all classes, a handicap being given at the start and the first yacht actually across the finish line being declared the winner. The race for the Seamanship Cup is open

to boys and girls under twenty-one in yachts of Class A; the race is twice around the course, the marks of which must be determined from a written problem in seamanship which is announced at the preparatory signal. The annual cruise to Blue Hill Bay is a three-day affair and draws together yachts from the near-by clubs, when races are arranged for all classes; in 1927 over ninety yachts took part in the cruise, and seventy-one crossed the starting line of the first day's run.

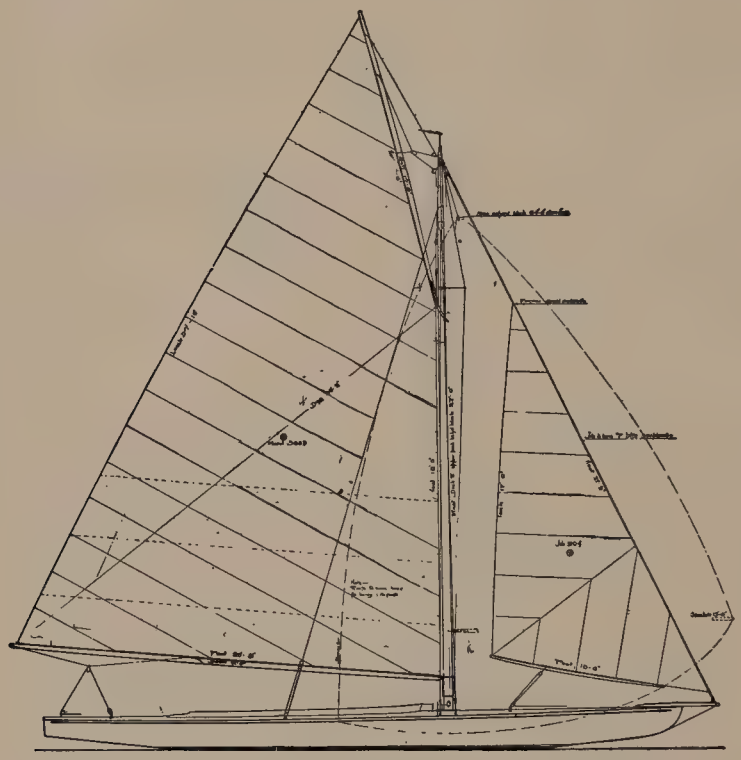
The keen enthusiasm at Northeast Harbor in racing and in yachting generally interests a large percentage of the summer population who turn out on race days.



ARRANGEMENT PLAN—MASSACHUSETTS BAY EIGHTEEN-FOOT CLASS
Designed by Charles D. Mower

To the westward of Northeast Harbor and Mount Desert Island lies Blue Hill Bay, at the head of which at East Blue Hill is located Kollegiwidgwok Yacht Club. Racing here is active. There are two classes; one of Alden O boats, similar in design and type to the Alden I boats at Northeast Harbor; and a class of Brutal Beasts. These are flat-sided, flat-bottomed, centre-board catboats, about 12 feet long, and resemble nothing so much as pumpkin seeds. They have proved very satisfactory for the younger sailors. The Kollegiwidgwok Yacht Club is the objective of the annual cruise of the Northeast Harbor Fleet.

Still farther to the westward, beyond the Naskeag Yacht Club at Naskeag and the Bucks Harbor Yacht Club at South Brooksville, past Jericho Bay is Deer Isle, on the westerly side of which, at Sylvester's Cove, is located the Deer Isle Yacht Club. Organized in 1925, after several years of sporadic informal racing, it conducts two series of races, one in July and one in August. Two races a week are held and the class is a handicap class. The nine yachts range in size from two Wee Scots, 11 feet, 3 inches



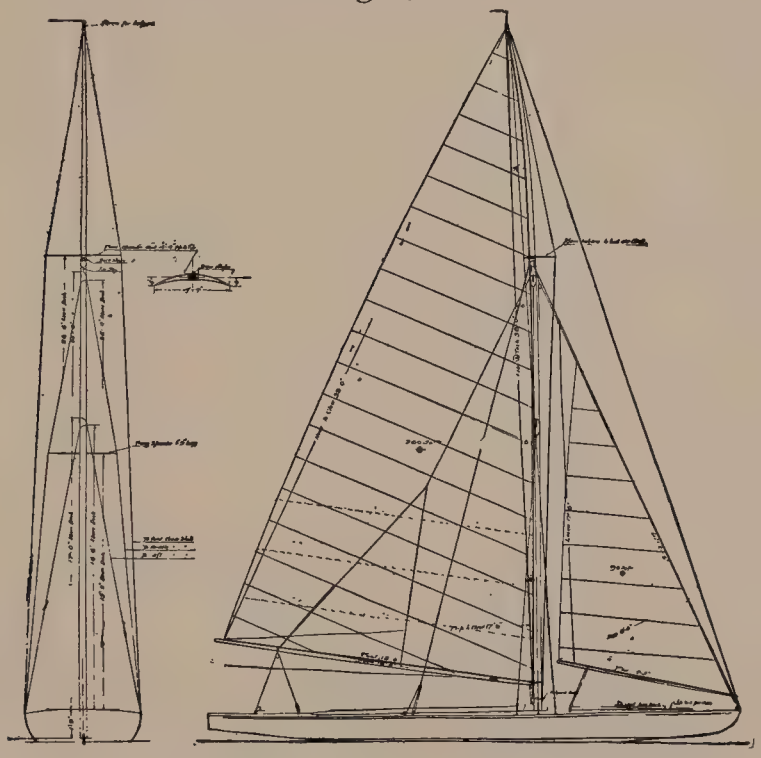
ORIGINAL GAFF-RIG SAIL PLAN—WANDERER VII—MASSACHUSETTS BAY EIGHTEEN-FOOTER
Designed by Charles D. Mower

in the waterline, to a 15-foot knockabout. The course is a triangle in Sylvester's Cove, a branch of East Penobscot Bay.

North Haven is across East Penobscot Bay and in the Fox Island Thorofare. The North Haven Yacht Club has shown an interest in yachting since 1900. At present two classes are being raced, a class of Crowninshield 17½-footers of the same design and type as those raced at Northeast Harbor and at Islesboro,

nine in number; and a class of forty-odd open dinghies 14 feet long. The North Haven Yacht Club is conducting two series of races in the dinghies, one for children from ten to sixteen years of age, and one for those under ten years of age, which plan should have far-reaching results in the development of future skippers. The Pulpit Harbor Yacht Club joins in the racing at North Haven.

Islesboro is north of North Haven (in the middle of Penobscot Bay) and has its two anchorages, Dark Harbor on the east side



WANDERER VII—MASSACHUSETTS BAY EIGHTEEN-FOOTER—SAIL PLAN MARCONI-RIG
Designed by Charles D. Mower

and Gilkey's Harbor on the west. Gilkey's Harbor is the home of the Tarratine Club, which organization is one of the most active centres of yachting on the coast of Maine, and one that has developed the largest racing class. This is known as the Islesboro 17½-foot class and consists of about forty-two yachts. These are constructed from plans by Crowninshield and appeared first in 1912. They are gaff-rigged keel knockabouts, and are raced at North Haven and Northeast Harbor. They are 25 feet, 10

inches overall and 17 feet, 6 inches waterline. In addition to this class is a class of keel knockabouts, 12 feet on the waterline, known as Islesboro 12-footers, 12 in number. Races are held throughout the summer, and the 17-foot class is so large that it is sailed in two divisions. The courses are laid out in Gilkey's Harbor and in West Penobscot Bay. An annual event is the two-day cruise to Buck's Harbor, in which all the racing fleet and nearly every other yacht at Islesboro participate.

West from Islesboro, the Camden Yacht Club at Camden, and the Boothbay Harbor are not active in yacht racing. From Islesboro there is no yacht racing east of Portland, almost 100 miles up the coast. At Portland, however, the Portland Yacht Club conducts races for five classes; a handicap class consisting of five boats, sloops, and yawls of more than 25 feet waterline length; a handicap class consisting of seven sloops of less than 25 feet waterline length; a class of five O boats of Alden design, similar to the O-boats in use at Northeast Harbor and at East Blue Hill; a class of two P-boats; and one of six Fish Class Catboats. Races are held throughout the summer, with a general regatta at the end of the season.

Portland is the westernmost of the racing centres which this article covers. There is but one organization remaining which should be mentioned. That is the Mount Desert Yacht Racing Association, which was founded in 1927 by representatives of the Northeast Harbor Fleet, the Winter Harbor Yacht Racing Association, and the yacht clubs of Bar Harbor, Seal Harbor, Sorrento and the Kollegiwidgwok, North Haven, and the Pulpit Harbor Yacht Clubs, in an effort to coördinate the activities of the member clubs and to represent them in the councils of the North American Yacht Racing Union. The organization is growing and promises to carry out the object of its foundation. From Nova Scotia to Kittery, on the Maine-New Hampshire state line, there are numberless harbors where sailing could be developed if there was the initiative to start it, harbors where today such interest as there is, is confined to motor boating. With the present growth of the popularity of the sailing yacht, it will not be long before these ports will join in the movement,

and the coast, which in the past was the birthplace of so many ships, will become the birthplace of many sailing yachts and sailors.

Editor's Note.—Mr. Madeira, a Philadelphian, who wanders far from his own fireside to sail, is a sailor of small and large boats. In the latter classification comes his present boat, an Alden schooner, Sagamore, with which he got second place in Class B—Bermuda Race of 1926. His love of the water and of cruising led him to become a member of the Cruising Club of America in which he is now active. He is Commodore of the Northeast Harbor Fleet and president of the Mount Desert Yacht Racing Association. He owns in addition to Sagamore, one of the Class A boats of the Northeast Harbor Fleet. Mr. Madeira is an enthusiastic yachtsman and has done much to increase the popularity of sailing on the Maine Coast and other places.

"THE QUEST OF THE CUP"[1]

(Races of the Gloucester Fishermen Type Boats)

By James B. Connolly

ANY time between twenty to forty years ago, were a curious stranger to loaf for a week or two in Gloucester, he could easily come to believe that the main interests of her people were not so much the catching and marketing of fish from the banks as they were the building and racing home of fast fishing schooners.

That time passed: fast and able sailing vessels never ceased to be desirable possessions, but the sentiment was growing that after all men went fishing to make a living; and the belief was growing that all-sail vessels were coming to the end of their day. Here were auxiliary engines being installed in some of Gloucester's most famous sailing schooners, while up in Boston, to which the big fresh fish market had shifted, big all-power iron fishing steamers were being built.

The time came when a man might sit in the Master Mariners' rooms in Gloucester for a week of afternoons and hear more comparing of engines than mainsails, more talk of quality of gas than of canvas. Some still active sail-carrying skipper might come in and revive the talk of all-sail vessels and real sailing for a while; but only for a while. Back it would go to engines and gas after he had gone.

[1] From the *Book of Gloucester Fishermen* by James B. Connolly. Copyright, 1927, by James B. Connolly. Reprinted by permission of the John Day Company, Inc., Publishers.

"THE QUEST OF THE CUP"

During this period of incoming motor power in Gloucester the fishermen of eastern Canada—of Nova Scotia, Cape Breton, Prince Edward Island, and Newfoundland—were arriving at the peak of their progress toward fine sailing vessels. The Provincial fishermen had always been a skillful, hardy, courageous company. Young men went from the Maritime Provinces to fish out of Gloucester, and back home they would come with great tales of Gloucester vessels, of the big money to be made there, of the greater glory of the life altogether. The dream of many a young Provincial was to be some day fishing out of Gloucester, perhaps some day to command one of her great vessels. The dream came true for many of them. Some of the greatest skippers that Gloucester ever knew hailed originally from the Canadian provinces.

It got to be so that when an ambitious Provincial fishing captain had a new vessel built, it was usually modeled off some Gloucester schooner that he had seen somewhere; and so it came to pass that some owners in the Provincial ports, clinging to their all-sail while Gloucester was veering into motor power, sent out vessels which they came to believe were equal to Gloucester's best.

In 1921 the city of Halifax, seeking for a big feature for their carnival week and the legitimate publicity which might spring from the same, staged a race for Canadian fishing schooners. The race was won by the Delawanna of Lunenberg, Nova Scotia. After the race a Halifax committee challenged the Port of Gloucester to a fishing schooner race with the Delawanna, the winner to be champion of the world.

The challenge conditions were arbitrary enough: Gloucester had to say yes or no to the challenge within one week, then name her vessel, and have her in Halifax ready to race within another ten days.

Now such all-sail vessels as Gloucester still possessed were at this time out to sea, running fresh fish to the Boston market or chasing mackerel to the eastward, or out on the long salt trip to the Grand Banks; and no telling when they would be home. Caught at such a disadvantage, some Gloucester citizens were for refusing the challenge; but others spoke up, saying that Glouces-

ter could not afford to decline any challenge. The fame of Gloucester's fleet, the deeds of her vessels and crews had become an American tradition, and now to refuse to race, no matter what the conditions or what the wording of a challenge, would be to smirch that tradition.

Then came the job of finding a vessel to race the Canadian. There were several fine-lined auxiliary schooners in port, of which any one would have sailed a good race if made ready; but the race day named by Halifax was too near to allow of the removal of engines, the shifting of ballast, the cutting of a full-size mainsail. Gloucester would have to take what she could find among her all-sail vessels.

They were still pondering and searching when sailing into port came the salt banker, Esperanto. Coming straight from ten weeks of battling with the high seas and strong winds of the Grand Banks, she was a hard-bitten specimen to look at. Her paint was worn off, her hull crusted with salt, shreds of green marine growth showed below her waterline. Her sails were worn and patched. Her mainsail was four years old; she herself was fourteen years old, and that she ever could sail at all had been forgotten by everybody except Captain Charles Harty of the racing committee. Harty squinted his seagoing eyes at the worn and weary lady rolling up the harbor and shouted, "There's our vessel!"

When the Esperanto was new Harty had had her for a mackerel season and while he had not had occasion in one short summer season to test her to the limit, he knew enough of her to be able to say "She could run and she could reach and she could go to wind'ard when I had her. Get her in trim and she'll sail again. She's got to be in trim, though."

It should be explained that the salt bankers were the one class of Gloucester schooners that were not kept in habitually keen sailing trim. A salt banker picks out a good fishing spot on the Grand Banks, lets go his anchor, and there he stays until that spot is fished out. He moves to another spot and there he stays until that spot is fished out or some bad storm compels him to find more open water. When she is filled up below, her skipper

gives her the mainsail, and home bound she goes. After eight or ten or twelve weeks from home they won't loaf along the way, but there is no terrific drive for market. The price of fresh fish may depreciate two-thirds or three-quarters over night, but salt fish prices do not fluctuate much. Salt fish will keep and so a salt banker does not have to keep in sailing trim; and so the surprise at the selection of the old Esperanto by Captain Harty.

Harty's judgment was accepted. The 250,000 of salt fish in the Esperanto's hold were hoisted out on to the dock, and the riggers put to work on her. There were those who said she couldn't be taken as she was and put in anything like proper shape in the short time allowed; but Gloucester can beat the world in making a schooner ready for sea. There are men in Gloucester who never did anything else but fit fishing schooners for sea. They have knowledge, long practice, and traditions to guide them. They work rapidly, but without scamping. There was an old fellow, nearly eighty years of age, and to see him sitting in a bosun's chair high up under the Esperanto's main truck, fitting a halyard through a staysail block—well, it was like seeing a jeweler at work.

The lumpers got to work then on the ballasting of her. Whoever, outside of Gloucester, would look for a wharf lumper to be interested in anything more than his pay envelope? These fellows were; and so were the men who scraped her spars and afterwards slushed them down. The care they took in laying on the vaseline—so that no square inch of main or foremast would check the hoisting or lowering of a sail if by and by it had to be done in a hurry.

There was one man who had the job of placing the few last pigs of iron in her hold under Captain Harty's direction. A 100-pound pig of iron is no feather to be carrying around. I was one day in the hold of the Esperanto and the lumper was walking around after Harty, hugging each 100-pound pig to his stomach, while Harty decided would it go just here or just there. The first big load of ballast could be dumped in any old way, but the placing of the last of it had to be done with care. The lumper would sometimes, after he got the word from Harty,

FAMOUS FISHERMAN BOAT—BLUENOSE
The lookout aloft is interesting

continue to hang on to the pig of iron to be certain he was dropping it in exactly the right spot.

With the ballast pretty nearly all stowed Harty would go up on deck to get the feel of her under his feet. He would then climb up on the wharf to see how she shaped up from there. He had a mark on her forefoot to guide him. He would go below, shift another couple of pigs of iron, get the feel of her under his feet again, have another squint at her from the wharf. By and by he said: "She's in trim. She can go any time now."

She was then hauled up on the marine railway to be scraped and scrubbed. Half of Gloucester came down to see what she looked like out of water. They found she was something to look at. She had the prettiest sheer forward, her after quarters were shapely also; and powerful. Some of us stood on the railway wharf and gloated by the hour together on the beauty of her.

She was painted then, shining black top planking and a yellow stripe from bow to stern below the scuppers. White and blue she was painted under her rails inboard and on the borders of her deck. Sliding off the ways she went then, and four-year-old mainsail and all, she was a picture.

There was talk of a popular subscription to get the Esperanto ready and send her to Halifax; but Gloucester has ever been a port of mostly poor people, and that year had been a hard one in the fisheries. The Gorton Pew Company, the public spirit of Benjamin Smith and Thomas Carroll urging, took over that expense.

The Esperanto sailed to a crowded Gloucester waterfront. Hundreds of boys and girls who should have been at school were in the crowd. School bells were rung; fire sirens whistled. Anything that could float, was rowed or motored or sailed out past Eastern Point to see her off.

The captain selected to sail her was Martin Welch, a short, stocky man with gentle brown eyes and shy ways. He was the real Gloucester type—skillful, cool, of calm courage. A sail-carrier, of course. "Under water or over water, it's all the same to Marty."

Until he sailed her out of the harbor that day, Marty had never laid his hand to the Esperanto's wheel. However, there

would be time enough to get acquainted with her on the 400-mile run down to Halifax, he said.

They could have picked ten fine crews for the Esperanto that week she sailed. Fishermen's Corner surged with rugged, capable young seiners and trawlers who were chafing to go. I was a lucky man to be picked as one of the crew. I was picked because Marty Welch, an old friend, wanted me to go, and because Ben Smith and Tom Carroll of the Gorton Pew Company were also willing.

We left on a Monday afternoon. All that night the air was light. Once, after an hour of a little more air, we hauled the log. Nine knots for that little wind? Good enough! On our second afternoon we were crossing the Bay of Fundy. Along toward midnight the lookouts were told to keep a sharp eye out for Cape Sable Light. I slept aft. At one o'clock I heard voices. Two men had just come below from their watch. They woke Captain Welch to say: "Have a look at her now, Skipper. Man, but she's doing a grand job now!"

Three or four of us hopped up on deck with Marty. She was down to her rail before a fine breeze off the land, laying an alley of all-white water the full length of her lee side. She was going! The sight cheered us. We had learned that she could sail well in light air, here she was stepping along like a lady in a fresh breeze, and we had no doubt she could go to win'ard. One of our crew was her regular bank skipper, Tom Benham. "Don't worry about her going to win'ard in rough water," said Tom. "Rough water to win'ard is where she lives."

The fine breeze died down before morning, but we managed to make Halifax Wednesday evening.

The test was to be two races out of three, the first race to be held on the following Saturday. The Esperanto tied up to a dock midway to the Halifax waterfront. Steady streams of people flowed down onto the dock to look us over, to compare her with the Delawanna, which was a new vessel. The vessels were of equal length, and of the same tonnage; but she was wider and we were deeper. After sizing up the Delawanna we decided that the Esperanto model, an old McManus one, was the better. Our entrance run was noticeably easier.

Our model also gave out an impression of greater buoyancy, even lying tied up to the dock. A man could not stand on her deck without getting that feeling of buoyancy in her. You could feel her tugging at her wharf lines, the tide pulling in and out under her, almost hear her saying: "Cast me loose and let me go! I want to go!"

She was perfectly balanced. Everything in her and about her—ballast, trim, model of hull, sail plan, all set each other off. It is a great feeling a man gets, that of finding a vessel in perfect sailing trim under him.

She could have stood up to a bit larger sail plan. Had there been time she would have had a slightly larger mainsail—she could have stood it—and certainly several of her sails would have been cut over.

At nine o'clock Saturday morning the race was on. The Delawanna crossed the line first. She led us for five miles or so, her shoaler model aiding her in the light wind; but as the wind picked up we walked up on her, breasted her, steadily worked through her wind, made out past her bow.

The wind freshened noticeably as we reached down to Chebucto Head, where all of Halifax must have been to see the race. We had been moving at about a nine-knot clip to the halfway buoy of the first thirteen-mile leg. We averaged thirteen knots or close to it for the second half; and after making out from under the lee of Chebucto Head, where the wind began to get a chance at her, we must have been doing even better than that. As the squalls came off the high land, she rolled her scuppers in, rolled her rail down to it, wetting it good at last. She was going then, and our fellows were talking to her:

"There's the girl!"

"Show 'em, girlie, show 'em!"

Our fellows were tucked under the windward rail in her waist, slapping their bare hands to her deck and talking to her, and she was tossing fans of spray over her windward shoulder by way of talking back. She sailed the last four miles of that first leg at a good fourteen-knot clip.

We ran the second leg winged out, with the masthead man,

Photo by Rosenfeld

GLOUCESTER FISHERMAN BOAT—MAYFLOWER

Mike Hall, having difficulty in finding the black can turning-buoy in a sea that was by now lumpy and dark under an overcast sky. He says we sailed a full quarter mile or more than she should, the little black buoy having no flag or mark of any kind to make it stand against the black water,—but, even so, she averaged better than twelve knots for the leg.

We had led at the first buoy by a quarter mile; at the second buoy we were half a mile in front; but we made our big gain on the third leg, the eleven-and-one-half-mile beat to windward.

It was beautiful to see her behavior in the lumpy sea on the windward leg, the way she sifted through, easing herself down into the hollows and up onto the crests of the seas. Down in and up and out of it she would ease herself with never a check to her speed; whereas when we looked back on our rival she was going plump! and then splash! stopping to shiver and shake herself in the hollows before mounting the crested tops. Our one never stopped. She kept right on going always. "In rough water to win'ard you'll find is where she lives," her salt bank skipper had said of her; and there we found she did live. In that eleven-and-one-half-mile beat to windward the Esperanto gained a full two miles.

Tacking around the last buoy for home, our skipper did not bother to set his fore-topsail again. "Extra work—what's the use?" he said.

When we turned the last buoy for the run home the bright sun was shining, the inshore water showing clear green and sometimes blue again. Men who saw her going home that day said she was the handsomest picture of a vessel under sail that ever they saw. She had the immemorial old shiny black topside and the yellow stripe to mark her run: her underbody was a bright red when up from the green sea she rolled it; her spars were of bright yellow pine; and looking at her wind-blown sails at the right angle under the shining sun made them seem clear white.

She spun around that last turning-buoy, then home she went like a dancing girl.

After that first race, the Delawanna's people realized that she had no chance with our vessel in a breeze of any kind; so for the

second race they removed more than half her ballast, risking all on light air and smooth water.

The Delawanna got light air to her order for the second race. We crossed the line first, but within a mile of the start she was sliding past us like a ghost in the haze. For the next thirty miles about all we saw of her was her stern. (The course with the windward work made more than a fifty-mile race of it.)

Every now and again the wind would lift a bit and when it did we would walk up on her. The wind would flop down and we would flop back. The water was smooth as an oil carpet, a dry fog hanging low over it.

We had turned the second mark, the course more than half sailed, when for the first time we caught a puff of wind that promised to last. We ran up under the stern of our rival, crowded our bow past her to windward. We had hope of working by her until she took to luffing us off; which she had a perfect right to do.

A dozen times we tried to pass; a dozen times she luffed us off. We were so engrossed in our luffing battle that before we realized it, Devil Island lay close off our bow.

This Devil Island lay so far off the line of the racing buoys that we had taken no notice of it on the chart of the course. The first thing I knew of the island was when I noticed a white light flashing ahead of me. It was a dark day, dark sea and sky; but even so—"A light flashing at two o'clock in the afternoon—what's the meaning of that?" I thought. I then saw a rocky island ahead of us and a white lighthouse on the island.

The island's pebbly beach lay off our starboard bow, a ledge of rocks dead ahead. We were making perhaps seven knots at the time; and closing in on the beach. We could have tacked under the Delawanna's stern and gone to leeward of her, but that would have cost us three lengths, which Marty did not propose to lose. The island loomed closer and closer; it was plain that the Delawanna figured on our fear of going ashore to force us to tack.

A Canadian pilot had been placed aboard us, to advise us as to the local tides and depths when called upon. He now called out to Marty: "You are getting in shoal water, Captain!" Marty

did not answer him—he was apparently seeing only the Delawanna. Mike Hall, the masthead lookout, called out at almost the same instant: "Oh, Skipper! I can see the kelp under her bottom!"

I took a look over windward side then. The kelp on the bottom was just under our keel. It must be remembered that we naturally drew half a foot more water than the Delawanna, and since she had taken out so much of her ballast we were drawing two feet more. We could go up on the rocks and the Delawanna still have water enough to swing safely away.

Marty nodded to let Mike know he heard. An instant later the pilot called out, "We are getting in very shoal water, Captain Welch!"

Said Marty, "I heard you the first time."

The ledge ahead, with the surf breaking over it, was then pretty handy. None of us anticipated being drowned—it would be tough luck for the man who could not swim the short distance to the beach—but it did look as if our vessel was about to be wrecked.

Now, one of the laws of that race course was that should any vessel find herself crowded toward the land on any part of the course, the vessel so crowded had merely to call for sea room to compel the other vessel to give way at once. We were all thinking of that rule no doubt. I know I was—wondering how about it when the pilot sung out to the Delawanna: "Give us sea room, Captain Himmelman! You must give us sea room!"

Captain Himmelman of the Delawanna was a good sport. He at once swung his vessel off, but his vessel was so close to ours that our sails backwinded his. Before he could get clear of us his main boom jibbed. Swinging across our port rail came the long boom. It threatened to foul our main rigging; and it jumped onto our cabin-house and held it off. The boom finally jibbed back without fouling. Had that boom touched any part of our vessel the race would have been automatically awarded to us. No one was wanting to win a race that way.

It cost the Delawanna a couple of lengths to get out of our way. We crowded past the ledge and into good water again. The wind continued to pick up. We sailed through the Delawan-

na's wind, tacked around the last turning-buoy with her bowsprit sticking over our taffrail.

It was a dead beat home for the last seven miles, with the wind constantly making. They have high land on both sides of the finish of that Halifax course. On the Esperanto all we got was "Hard-a-lee! Hard-a-lee-ee!" from our driving skipper at the wheel. With out rail awash, jam up to the rocks and the east side we'd go, and then jam up to the rocks on the west shore, both tacks aroaring. The rain was coming down in squalls and the sea growing mean and dirty to look at; while behind us the Delawanna, cork high in the water with so much of her ballast out, was threatening to capsize herself and spoil our driving finish, for of course if she did capsize we would have to run down and pick off her crew.

We crossed the line with lightning playing and thunder roaring under black, low-handing clouds.

That race gave us the cup.

In that last 7-mile beat home the Esperanto beat the Delawanna 7 minutes—a minute to a mile. In the 11½-mile beat to windward in the first race she beat the Delawanna 12 minutes—a minute to a mile. That difference represented the superiority of our designers at that time.

The Esperanto certainly proved herself a horse to windward when it blew. For the matter of that, no Gloucester vessel was ever rated high that could not go to windward in a breeze. Wind ahead and rough water is so much a part of a Gloucester schooner's bank life that to design a vessel which won't do well under such conditions is to waste your wood and canvas altogether.

Marty Welch sailed two superb races. At six o'clock on race mornings we would be having breakfast on the Esperanto. By seven o'clock the vessel would be under way with Marty at the wheel. From then on until he tied her up to the dock again at five o'clock in the afternoon of both race days, Marty never let go that wheel, except for once in the first race when he gave over the wheel long enough to step down into the cabin to light a cigar, there being too much wind spilling off her mainsail; but only that once. On both race days he stayed to that wheel,

leaving it for no purpose whatever, except to light that cigar; not even to get a bite to eat or a sup to drink did he leave the wheel. And no food or drink was brought him while at the wheel, not even a cup of coffee.

He stood there, watching his vessel, watching the other vessel, laying his course, deciding his tactics, giving his orders and seeing to it that they were carried out. Always himself alone,—no after guard, no advisory board, no assisting navigator. He never even sailed over the course before his first race. He did have, in his mate, Captain John Mathison, an able helper with his headsails.

We had six qualified fishing captains in the crew of the Esperanto, and every one of them probably had his own notions of how a race should be sailed; but no one of them ever offered advice or was asked for advice once she crossed the line in a race. That is a fishing skipper's notion of sailing a race.

Gloucester regarded this Cup Race as a fishing and not a yachting event. We heard some talk before we sailed for Halifax of the Nova Scotiaman being put through regular sail drills. On the run down some of our fellows thought it would be a pretty good idea to do a little drilling, too. Marty, the easy-going one, did not warm up to it much, but he said to go ahead and try it. So the Staysail gang started in, lowering that big piece of canvas to the deck, hoisting it aloft while the ship tacked. Three times they did that; and then everybody just naturally rested up, and that ended the fancy drilling for our crew. All hands believed it would speed up a crew of men, but somehow it was not fishing fashion. The right natural way for a fishing crew to shake down is in the regular course of duty. This business of inventing exercise for a crew of fishermen—well, the last thing a fisherman out to sea needs is exercise. I might say that the Delawanna's gang handled sails faster than we did in the first race. Then our fellows began to shake down into it; in the second race we thought we handled sails the faster.

That Esperanto crew were good sportsmen. The talk of prizes and rewards in connection with the race left them cold. An immense big silver cup, the same set up on a high ebony pedestal,

Photo by Rosenfeld

ELIZABETH ANN HOWARD—A POWERFUL TYPE OF FISHERMAN BOAT

was the token of victory. The cup was on exhibition in a shop window on the main street of Halifax, and the shop was within three minutes' walk of the Esperanto's dock. When one night on the run home somebody thought to inquire how many of us had seen the cup, it turned out that only nine members of the twenty-five in crew had walked up the street to look at the prize cup. They were not interested in any prize cups.

We took the cup home in the vessel. We stowed it in the main hold and there it lay throughout all the run home without the crew caring enough about it to bother to get it up out of the hold and have a look at it; so most of us never did see the cup until the night of the victory dinner in Gloucester.

A smaller cup was awarded Marty, as master of the winning vessel. That came in a cardboard box tied with string, and was brought into the cabin. All the trip home it was knocking around the cabin, being hove from one locker to another as it got in somebody's way. Neither the skipper nor any of the crew ever bothered to untie the strings and look to see what the cup was like. Nobody was interested in prize cups. The ancient Gloucester symbol of victory, a broom to the masthead, was always regarded with more reverence than that big cup.

Every member of the Esperanto's crew was an American citizen, and every one served without pay. The race, taking it from the time the crew signed on until the Esperanto was back home and they could ship to go to sea again, meant the loss of a month's work to most of them. The agreement was that the Gorton Pew Company people were to take what prize money might be won to reimburse them for the expense of fitting out the vessel. The first prize was $4,000. From out of the prize money the owners bought souvenir watches for the crew. The watches pleased the crew more than all the prize money in the world could possibly have done. The Esperanto never raced again. She went back to the fishing; and one foggy day, while coming home from a Grand Banks trip, she was lost on Sable Island. Her crew were saved.

In the meantime, Nova Scotia had built herself a new vessel and challenged for the cup. Gloucester had no new big vessel

to match her, but the Committee looked about them for an available craft. They were in much the same fix as when the Delawanna challenged, and the old Esperanto came sailing into port to serve their needs.

Another old vessel came sailing into port now from three months' salt fishing on the Grand Banks. She looked like a vessel needing a good rest; but no rest for her—she had to serve. Her cargo of fish was hoisted out, her old planks scrubbed and painted, a few patches slapped onto her wind-blown sails, and off to Halifax she was sent, ere yet she could draw a quiet breath at home, to defend the International Cup.

Elsie was her name, and a great little vessel she proved herself. The new Nova Scotian was named the Bluenose, and a whale of a size she was for a fisherman, being twenty feet longer than the Elsie (or anything else out of Gloucester) and spreading two thousand more square feet of canvas. The Elsie beat the big fellow running and reaching, but that twenty feet of overlength and 25% more canvas, were too much for the little one going to windward. She left the cup in Halifax.

It should be explained here, perhaps, that there are no time allowances in Gloucestermen's races. It is boat for boat always with them, and very properly so from their point of view. If you are driving for market with a trip of fish (and driving to market was what the first fast fishermen were built for) and you are overhauled by a bigger vessel, the big one isn't heaving to until you run out any time allowance is she? She keeps on driving for market doesn't she? She certainly does; so why should there be any talk of time allowance between two vessels racing for any cup?

The Gloucestermen did think that the Bluenose was too big for an honest-to-God fisherman. Such a size of a vessel was bound to lose money for her owners. She was like a vessel built for racing alone; which isn't right. A vessel must be always a fisherman; if she isn't that she might as well be a pleasure yacht. Gloucester judgment was borne out later when the Canadian government had to finance the Bluenose to keep her racing.

Gloucester later built two vessels to match the Bluenose, not

quite her size but near enough for racing: the Henry Ford, designed by McManus for Captain Clayton Morrissey; and the Columbia, designed by Burgess for a syndicate of owners. But the days of real fishermen racing seemed to have passed. The size of the Ford's mainsail was objected to by the Nova Scotians. To Captain Morrissey (and all of Gloucester) it seemed a most ridiculous thing that a mainsail which his vessel was able to swing in a gale of wind on the fishing banks was judged too big for a race for a pewter cup within sight of land. However, the Ford cut down her mainsail, went out and won two races and the cup (as she thought) only to have it taken from her by a queer judges' decision. That was the year the Gloucestermen allowed themselves to be talked into letting a bookful of yachting rules govern the race.

The last race for the cup was in 1924, when the Columbia went to Halifax. It wound up when the Bluenose "cut corners"; that is, sailed inside a buoy, when she should have sailed outside it. The Columbia had her safe under her lee quarter at the time. The Gloucester men had been nursing several grievances before, but without complaint. Now they protested against this short course sailing. The Halifax Committee could do nothing else but rule against their own vessel, whereas the Bluenose captain withdrew from further racing.

The Halifax Committee thereupon came to Captain Pine of the Columbia, saying:

"Captain, if you will cross the starting line at nine o'clock in the morning and sail over the course, we will award you first prize money and the cup."

To which Captain Pine replied: "I'll cross that starting line tomorrow morning—I have to cross to get out of here—but I don't sail over any course. To hell with your prize money and to hell with your cup—the Columbia keeps straight on to Gloucester."

She kept straight on to Gloucester, and the cup is still in Halifax—Gloucester doesn't want it. But she did want to race the Bluenose to a finish. A year later and again last year, the Ford and the Columbia captains did everything that men could do to get a race with her, but her captain just would not race.

The Ford is now an auxiliary fisherman, the Columbia is soon

to be made into one; and so will pass out the last of Gloucester's all-sail fleet; so will pass out what were doubtless the fastest pair of two-masted schooners, take them, blow high and low, from one year's end to the other, ever to hail from one port at the same time. The Mayflower of the Boston fishing fleet, which tried to race for the cup but was barred by Halifax, might have classed with them; as so might Captain Jeff Thomas's Puritan that was built to lift the cup and lost on a Sable Island bar before ever she had a chance to do so; but hardly any others in the way of two-masted schooners were their equals.

Today it looks as if the Fishermen's International Race has passed on. A great pity if it has. The public had been hailing it as the real Blue Ribbon of the sea. Here were no teacup races for fair weather craft: here were seagoing craft with real sailormen to man them—so the public rightly had it; and so a pity that it was allowed to die. All Gloucester can say is that she raced fairly while she was at it, did her best to keep the spirit of the race alive. No fault of hers if it is dead.

EDITOR'S NOTE:—My friend Tom Daly is himself so close a friend of Mr. Connolly that I felt it would be best to ask Mr. Daly to do the editorial honors here. Mr. Daly accepted with delight, but shortly thereafter he came to me and said: "Just see what has happened! In my anxiety to cover all the highlights of Connolly's career I, in turn, appealed to Joseph Smith, of Boston, who is better posted upon J. B. C. than any other man alive. Instead of sending me the bare bones, which was all I expected, Mr. Smith has produced a perfect and complete prose poem which it would be profanation for me to touch."

So here we have it! Mr. Joseph Smith speaking:

"James Brendan Connolly was born in South Boston, Mass. He was at Harvard for a time, leaving there in order to attend the Olympic Games at Athens in 1896, where he won the first Olympic Championship of modern times. He was the American amateur champion hop-step-and-jumper, captain and halfback of the Savannah Football Team and halfback of the Gloucester Athletic Club Football Team.

"Connolly comes of a family of fishermen and sailors that came out of the stormy Arran Islands to America; the salt of the sea is in his blood and the whistle of the winds and the songs of the storm in his soul. His ancestors were, as Yeats says, the "companions of Brendan," who adventured the unknown Atlantic wastes before Eric and his Vikings went out of Norway to the Labradors. To him the call of the Great Waters and the lure of the tropic and outer islands are irresistible, and experience and native ability have made him par excellence the teller of sea stories of the men who go down to the sea in ships.

"No writer of the sea in the past century has surpassed him in his favorite field; the reek of deck and rigging, the distant, naked horizons, the heave of wave and tide, and the atmosphere of the latitudes are in all his pages; he is of the brotherhood of wind and wave; he speaks the language of the men of the sea and they find in him one of the ocean clan, their kin in soul and sentiment. Harvard and its bookshelf builders have set Dana and his *Two Years Before the Mast* as the models of matters marine; yet Dana was a landsman and a reporter, who, after his brief experience before the mast went back from deck to desk; but Harvard has its fads and favorites and its loves and limitations.

"To those who know the sea and its people, the cognoscenti, three great names emerge from the literature of the sea of America; Cooper, Melville, and Connolly, all others are leather and prunella. On the other side of the water they acclaim Conrad; Kipling at sea is a smart amateur, none too modest; Masefield outclasses him for he knows the sea and its men. The old voyagers and navigators adventured audaciously in a world of mysteries and monsters. The sharks and swordfish,—the pirates, buccaneers, raiders, slavers, and shore scum—that followed the wake of the discoverers had their chronicles and chroniclers; their tales of plunder, outrage and horror. But it remained for Cooper, Melville and Connolly to tell the tales that appealed to heart and imagination of their day and give to the race some inkling of the manner of men who followed the most dangerous of callings, and show us their courage, simplicity, and human nature.

"Connolly has done this, and he has an audience of readers

in all the land that lives the saga of the sea and the men whose courage and simplicity send them out on the face of the waters to face danger, disaster and death as all in the day's work.

"James B. Connolly has followed the sea in many capacities. He has been on the North Atlantic cattle boats; he has fished on the banks in wintry gales; he has sailed with fishers in the Baltic, the North Sea, and the Arctic; he has sailed the Gulf of Mexico in a tanker; he went whaling out of Norway with Morgen Ingrebricksen, the greatest whaler of them all. He has sailed on battleships, cruisers, gunboats, colliers, destroyers, patrols, submarines, flying boats, and airships; he went round the continent with Roosevelt's famous fleet; he was at Vera Cruz when Wilson sent a fleet to take that port. He served with the famous Ninth Massachusetts in Cuba at the Battle of Santiago; he was a correspondent for Collier's in Mexico in 1914, and in Europe in 1917–1918; and went in and out of Irish and French ports on destroyers chasing U-boats and safeguarding shipping; and he spent perilous days in Ireland for the Boston American in 1921 during the savage Black and Tan War.

"He knows Gloucester and its men; they know him afloat and ashore; and he is persona grata there. He belongs. He has sailed and fished with them; he was one of the crew of the Esperanto, the Gloucester boat, when she won the first International Fisherman's Race. He knows the sea and its sons, from Gloucester to Punta Arenas; from the tropics to the Arctic Circle, and he has written many books, all good, of his experiences and adventures—clean, wholesome books, that pulse with bravery without *bravura*, sacrifice without stop, danger and daring without dirt, with high adventure, with toil and travel and with the spirit that inspires. This is James B. Connolly."

THE SCHOONERS OF BILOXI (MISSISSIPPI, U. S. A.)

By Gerald T. White

PATRIOTISM is a sterling virtue although, at times, it leads to misconceptions. The down east fishing schooner is looked upon by many sea-minded Americans as a triumph of the designing, building and handling ability of men from the State of Massachusetts. Lest they forget, we would remind them that many of the finest of the fishing two-stickers hail from Canada and fly the red ensign.

The clipper ship is popularly supposed to be another product of the United States. Many of the finest vessels were built here, and there is little doubt that American enterprise produced the type, yet a great number of fast clippers were built in England and Scotland.

In this article I shall try to describe a type of fishing schooner which is purely American; a type which has received little publicity, the Biloxi schooner.

Biloxi is one of the most charming cities of the United States. Situated on a portion of the Gulf of Mexico, called Mississippi Sound, it is rich in history, for it was founded by D'Iberville in 1699, nearly twenty years before Bienville planted the standard of France at New Orleans. The Biloxi people, the Biloxi scenery, the Biloxi climate are all worthy of an extended descriptive praise, but here we will have but a chance to say something about the Biloxi schooner.

These boats are built along the shores of Biloxi Back Bay by native builders, whose shops consist of a roofed bit of shore front and a bit of woodworking machinery. Because Mississippi Sound is shallow, the boats must draw the minimum of water and because the shrimp and oyster business demands speedy boats to catch the best market prices and to preserve the catch in a country where it is always warm, the boats are speedy. Gulf of Mexico storms are famed for their suddenness and violence and when the dread hurricanes sweep across the shoal waters of Mississippi Sound the seas are tremendous. While the real hurricanes are

MAP SHOWING THE BODIES OF WATER, NEW ORLEANS TO PENSACOLA—GULF OF MEXICO

just as destructive to Biloxi shipping as they are to any other sort the boats of this delightful southern city are built to stand rough water, plenty of it.

The Biloxi boats do not vary much in size, for the range seems to be between 60 and 72 feet in length on deck, although there are a few boats, usually those owned by individual fishermen and not members of the big fishing company fleets, which are shorter.

Because of the shoal draught of 4 feet or so the boats are rather straight-sheered to provide sufficient depth of side to give a girder action. All of them are fitted with centreboards of wood operated by a long iron rod which leads up through the deck just forward of the mainmast and hoisted by a tackle rove through a block at

the head of the mast. The handling of the centreboard is an art, and when making a fast passage over the shoals two men are stationed at the centreboard tackle. One mans the tackle and the other keeps his hands upon the rod. The board is lowered until it just touches the bottom of the bay—or, at least, the shoaler spots—and it is then hoisted a few inches. As the man

THE H. E. GUMBEL, 1927 GULF SCHOONER CHAMPION, GLIDING DOWN THE GULF WATERS AT BILOXI

at the rod can tell instantly if the board touches by the vibration, he is constantly engaged in ordering the tackle slacked or tightened until the maximum area of board is always exposed, but the board never drags except for an instant. As a check on the centreboard man, the mate is apt to lie on his stomach on the after deck, watching the wake; and when a telltale streak of muddy water joins the white bubbles of the wake, the centreboard man

is informed with great profanity that he had better stay ashore if he wants to do his plowing.

All of the boats are two-masted and carry double jibs, gaff-headed main and foresails, main-topsail, and a fisherman's stay-sail. The knockabout schooner is unknown in Biloxi and the long bowsprits seem to have insufficient stays according to yachting practice for they weave about in a disconcerting manner when the boat is under a press of sail.

There are two hull variations. One type has a clipper stem and a bit of overhang aft, which rounds into a transom stern set on quite a rake. The other type has but little overhang forward, the stem being slightly rounded and the stern is almost plumb and comes down to the waterline. In both types the underbody is about the same with a quickly rounded bilge and a comparatively flat floor. Between the adherents of the two types there is a most bitter competition, a fact which is increased for the reason that one of the two great fishing companies builds the clipper-stemmed boats and the other sticks to the craft with the longer waterline. It is this rivalry which makes possible the annual fishing schooner race which, in most respects, utterly outshadows the event held in Massachusetts or Canadian waters each year.

The construction of the Biloxi boats is very sturdy but scantlings are not increased to the point where speed is sacrificed. A notable point is the use of cypress for all portions of the hull; keel, frames, planking and decking are all of the native wood and the curves are obtained by sawing instead of steam-bending. Galvanized spikes are used for fastenings and in spite of the very salt water of the Gulf, the boats seem to last for years and years.

A few smaller boats along the same lines have been built and now and then one sees a sloop-rigged fisherman. Few, if any, of the boats have engines, as it is against the law to fish under power. It is but natural that the Biloxi type has attracted the attention of yachtsmen and quite a few of the schooners have been converted into pleasure craft and are enrolled in the fleets of the Southern Yacht Club of New Orleans, the Eastern Shore

A Scene During the Gulf Schooner Championship at Biloxi, Miss.

Yacht Club of Mobile and the Biloxi Yacht Club. As Biloxi is about equidistant from Mobile and New Orleans, it is easy to see that the fame of the Biloxi schooner is spreading along the coast and we believe that it is only a matter of a few years before these boats will be very popular for pleasure service in all Southern waters.

If I should tell you how much a Biloxi schooner costs, you would not believe me, and I am also afraid that my quotation would not be true for very long; for when yachtsmen come to realize the utterly ridiculous price being asked at the little Biloxi shops, there will be a sudden demand for the boats and the native builders will come to a realization that northern yachtsmen willingly spend more for one boat than a fishing company does for a fleet.

The annual Biloxi fishermen's race occurs in July and for weeks before the event the entered boats are groomed for the contest. As it is off season in the industry there are plenty of experienced men idle and each skipper selects his racing crew of about thirty-five men. As half a score of schooners may be entered, it is safe to say that four or five hundred men are engaged for some time in fitting their favorites for the big race. Bets are made, much loose talk goes on in the fish houses and docks. Now and again some of the more excitable come to blows and are yanked apart with orders to forget it until the day of the race and then to sail rings around the other fellow.

Every ounce of ballast which can be spared is taken from the capacious hold. New sails are bent and new running rigging where needed. The boats are hauled out and the bottoms smoothed and painted. At last the great day arrives. The skippers report to the white-flanneled yacht club committee, embarrassedly revolving their stiff, straw hats in work-reddened hands as they listen to the starting instructions.

In the narrow channel, bordered by as fine a fleet of spectator yachts as we ever see, lie the contestants. The men lie on deck and hurl verbal insults to their rivals, while they await the return of the skipper from the crowded clubhouse. Finally he comes off in a shaky bateau (I have never seen worse rowboats

THE MARY FOSTER, ONE OF THE MOST BEAUTIFUL OF THE BILOXI BOATS, IS SHOWN HERE UNDER FULL SAIL

The Start of the Gulf Schooner Championship at Biloxi, Miss., on the Gulf of Mexico

nor better schooners than they have at Biloxi) and climbs aboard. The mate and one or two leading men crowd about him and ask for the instructions. He has remembered the starting signals but advices about rights of way, luffing matches, starboard tacks and such technicalities leave him unconcerned. He may explain that the committee has cautioned him that all is not fair in love, war, and racing but his crew swear by the shades of the millions of shrimp they have caught that any competitor that gets in their way—particularly if he is a member of the rival fish house—will be rammed.

The preparatory gun is fired, sails are raised, and the crew scatter to their positions. Remember that most of the ballast has been taken from these boats and the weight of the crew is what keeps them on their feet. Picture sailing Resolute with live ballast!

For several minutes the racing boats manœuvre about in the narrow confines of the channel. How they do it is a mystery. Bowsprits sweep over the decks of rivals. Threats are hurled from boat to boat as a collision is averted by a hair. Bang! goes the starting gun and they are off to the first buoy, a few hundred yards away. In a mass they sweep around as the crew handle the sails in a jiffy and then flatten themselves on deck along the windward rail. It is worth your life to stick your head above the rail of a Biloximan when she is racing. I finally had to abandon taking action pictures, because the crew in one race felt that the air resistance of my head and tiny camera was causing them to drop back.

That is racing, real, red-blooded racing, racing elsewhere unknown for thrills in yachting. When it is all over the winning crews make merry, oh how merry, and the town resounds to their pæans of victory. Once a year that goes on at Biloxi, and once a year thousands of yachtsmen miss seeing the greatest commercial boat contest of the world.

SMALL BOAT RACING AT MARBLEHEAD, BUZZARD'S BAY, AND NEWPORT

By William U. Swan

SMALL boat racing on the New England Coast did not become a recognized sport until after the Civil War and then only in one or two points in Massachusetts and Narragansett Bays. Gradually its popularity extended up and down the shore line, until in 1927 there were over forty ports holding regattas more or less frequently during the summer season, especially in July and August, with Marblehead so far in the lead both in intensity of racing and in the number of boats that it had become the acknowledged yachting capital of the nation.

It was early in the eighties that Massachusetts yachtsmen, especially the followers of the sport in Boston, discovered that the ancient fishing port on the north shore of Massachusetts Bay afforded the best facilities for yachting within fifty miles of the Hub. The formation of the Eastern Yacht Club a few years previous, followed by the Corinthian in 1885, placed small boat racing on a firm basis. Furthermore, Marblehead attracted every cruising yacht on the coast, and was also the scene of several intersectional and international contests with small boats, while it was there that the junior championship had its origin through the efforts of the writer.

The harbor of Marblehead is particularly adapted to small boat racing, that is, yachts under 30 feet waterline. The roadstead is deep, and almost completely landlocked, yet it is not so large but that all yachts can reach the starting line within a few minutes after leaving their moorings, while half an hour after the close of a regatta all hands are ashore and fighting the race over again on the broad verandas of the three club stations. Four shipyards offer facilities for reconditioning, rebuilding, and

repairs, and for the production of new classes. With the resumption of racing following the close of the World War, five yacht clubs at Marblehead came to an agreement on a season's schedule, with twenty-two championship events, a midsummer series of seven open races in August, morning and afternoon events on Sundays, afternoon racing on Wednesdays in July and August, and numerous smaller events, bringing the summer activities up to 100 fixed regattas between the last of May and the last of September, and the enrollment of 166 racing yachts of the sail.

The racing fleet at Marblehead at this time, 1928, is composed of ten classes, of which eight are of the so-called one-design variety, while the other two, designed under the American or Universal Rule of measurement, are the 25 and 20-raters or classes Q and R. The two latter are open to any kind of boat designed in accordance with the rule, and offer naval architects an excellent opportunity to express their ideas and theories along certain restricted lines. Up to 1927, Marblehead had fought stoutly for the Universal Rule, and very few boats had appeared of the International Rule type, which at this time is becoming a feature of the small boat racing in Long Island Sound.

The Marblehead school of applied yacht racing has produced some of the ablest Corinthian skippers in the country, notably Charles Francis Adams, a descendant of two presidents and for many years treasurer of Harvard College. Starting small boat sailing at Quincy in the late seventies, Adams has owned more racing craft and sailed more miles than any other yachtsman in the country, his principal achievement being the handling of the Resolute in the races against the Shamrock IV for the America's Cup in 1920.

He claims that the secret of his success is preparedness, but he modestly omits a natural aptitude for the sport, and an almost uncanny sense of wind direction. In 1928 he was the acknowledged champion Corinthian yachtsman of North America.

The climax of the yachting season at Marblehead is the midsummer series. Of the seven open regattas, three are held by the Eastern, three by the Corinthian, and one by the Boston

MARBLEHEAD HARBOR WITH YACHTS BOUND FOR THE START OF A RACE AND THE PRESIDENTIAL YACHT, MAYFLOWER, IN THE CENTRE

Yacht Clubs, with supplementary events during the forenoons by the Pleon Yacht Club, the oldest juvenile organization in the country, and the Eastern Junior Yacht Club. Practically every racing sailboat in Massachusetts Bay, with the exception of Duxbury and Wellfleet, stream into Marblehead Harbor during the second week in August. In 1927 there were 33 classes on the program, and on August 11th, no less than 291 yachts crossed the starting line in the Corinthian Yacht Club's first regatta, a world's record up to that time.

For the beginners there has been provided a square-sided 14-foot catboat, known locally as a Brutal Beast. This is the kindergarten class, and it is divided into four sections, one for boys or girls who have never sailed before, and who must have an older hand in the boat; a second for those who have had some training, but who again must be accompanied; a third for youngsters who have qualified and who are allowed to sail alone; and a fourth for expert juniors using specially constructed Brutal Beasts. Each year some of these youngsters graduate into the smallest of the knockabout divisions, the T class, then to the O-boats, which are somewhat larger, and so on until they reach the senior class of Q's and R's which are sailed by the best in the harbor. The whole scheme is educational, while in addition the youngsters have the benefit of paid professionals for morning lessons.

Not only is Marblehead one of the best ports for racing, but it is one of the few places in which spectators may watch the sport under the best conditions. The entire fleet starts and finishes within half a mile of the government reservation on which stands the lighthouse and here every race day gather the experts, armed with binoculars and a program furnished by the *Boston Transcript*, giving the "names and numbers of all the players," that is, the number, name, and owner of each yacht. In other words, Marblehead affords the interested follower of yachting an opportunity of watching his favorite recreation, without money and without price, a combination which no other sport has yet offered.

Once or twice during the season Marblehead revives memo-

ries of her early major yachting days, when the largest racers in the Atlantic Coast sailing fleet gather at the old port for two or three races over time-honored courses in Massachusetts Bay, for which the chief incentives are the Puritan and Cleopatra's Barge Cups, while every few years the New York Yacht Club squadron drops in for a day or two and perhaps holds a King's Cup race off the Neck.

Success in small boat racing at Marblehead has been largely due to the able management of the hundred season's regattas. The rules are rigidly enforced, protests are speedily adjudicated, and signals are fired on the second, while every detail for each race is worked out many days in advance and programs issued promptly. Furthermore the regatta committee refuse to answer hails. In all the inside races of the Corinthian Yacht Club, the regatta committee is housed within a few yards of the starting line, and is left alone to its arduous duties of checking two or three hundred boats as they start off, and clocking them as they finish.

A few years after small boat racing had its inception at Marblehead, a number of residents on the other side of Salem Bay, becoming interested in the sport, formed the Beverly Yacht Club of Beverly, Mass. After some ten years of racing many of these yachtsmen began to drift down to Buzzard's Bay, and the late eighties found so many of the club in those waters that a second station was located at Wing's Neck, and for several years the club held two sets of regattas. When more of the Salem Bay members went to Buzzard's Bay it was found necessary to give up the original station, but the name was retained, and we find therefore a Beverly Yacht Club in a spacious clubhouse with a golf course auxiliary at Marion, Mass., and holding a three-day meet in early August that has become one of the interesting fixtures in American Yachting.

Yachtsmen have found Buzzard's Bay the best sailing waters on the Atlantic Coast, through the reliability of its winds. Racing in upper Long Island Sound and in Massachusetts Bay is handicapped by light airs and in late years by increase in commercial traffic. In Buzzard's Bay the southwest breeze comes

sweeping in from Hen and Chickens Lightship nearly every afternoon and holds on until dark. It is for that reason the season of the Beverly Yacht Club at Marion, as well as the New Bedford Yacht Club at South Dartmouth and the Quissett Yacht Club at Wood's Hole, are invariably successful, and it is years since a race was called off for want of a breeze. The New York Yacht Club seldom goes on a cruise without visiting Buzzard's Bay and holding at least one regatta.

In recent years both the Beverly and the New Bedford Yacht Clubs have staged Race Weeks which have drawn yachts from many nearby ports, and even from as far as Marblehead. Lately, small boat racing in Nantucket Sound has increased amazingly, and in 1927 Edgartown, Wianno, Cotuit, Waquoit, and Menhaunt, all popular summer resorts, held races several days each week during the season, while Edgartown has been entertaining a fleet of nearly 100 yachts at an annual open regatta the first Saturday in August.

Although Newport was visited by the first yachts in American waters, nearly a century ago, and has seen racing by the most notable major racing craft ever built in the country, it never took up small boat sailing to any extent; in fact, its only part in the history of the American minor racer is about ten years of competition for a 30-foot one-design class. When that disappeared some years before the war, no other class took its place. A few miles across the bay, the Conanicut Yacht Club has been racing small boats for fifteen years, while the Warwick Country Club half way up to Providence has been the most active small boat centre in Rhode Island since the war. It was here that the International Star Class Championship was held in 1927 and the title carried off to the Pacific Coast by the Tempe III of the Newport Harbor (Cal.) Yacht Club.

EDITOR'S NOTE.—Racing in the waters of Maine has been described by Mr. Madeira in another paper.

SAILING AT SEATTLE

By Nard Jones

ALTHOUGH it is true that Seattle sailing will not rank in quantity with the ports of the east or even with some of the southern harbors of the Pacific Coast, it can—and does—point with pride to that master western yachtsman, Ted Geary, and his redoubtable Sir Tom, holder of the Lipton Trophy. It is perhaps only fair to say that the leading R-boats of the northwest are the Sir Tom and the Lady Pat, of the Royal Vancouver Yacht Club, skippered by Ron Maitland. Fritz Hellenthal's Gwendolyn should not be left out of the galaxy of northwest sailing craft.

There is an increasing tendency to put more emphasis on sailing in and around the Puget Sound district. It is a new country to yachting, and the very new yachtsman is too prone to rush to the nearest boat builder and order a vessel propelled with an engine. For, after all, a complicated marine engine is much simpler to the layman than the sheets of a sailing boat; but, quite gradually, as yachting in the northwest becomes more seasoned, the yachtsmen are learning the thrill of the sail on the horizon, and the fine art of taking a sailing craft to victory.

Even now the Seattle Yacht Club is preparing for a saltwater anchorage on the Sound proper for its sailing fleet. This club is situated upon Lake Washington, and present arrangements necessitate going through the Canal to the Seattle Harbor, Elliott Bay. While this is hardly an inconvenience to motor propelled craft, it is somewhat of an annoyance to the sailing boat. Fearing that this might hinder the steady progress of the interest in sailing, the heads of the Seattle Club have vigorously pushed the idea of an outside haven.

The coming season 1928 promises to be unusual as regards sailing activities at Seattle. At no other time in the history

of the Seattle Yacht Club has so much interest been taken, not only over an impending meet, but in the future of Seattle sailing as a whole.

It was a decision of this year's meeting of the Pacific International Yachting Association that the 1928 sailing events be held at Vancouver, British Columbia. Seattle yachtsmen are aware

that wind and water conditions are apt to be more favorable there than elsewhere in the northwest.

This decision follows closely on the heels of a move to construct a $2,000,000 breakwater across the mouth of the Sound end of the Lake Washington Canal. This location is known as Salmon Bay. Behind this breakwater the Seattle Yacht Club plans to construct its "salt-water branch" and thus solve the problem for the sailing craft owners.

It is the tugboat owners who are sponsoring this breakwater, but there will be adequate room for a large motorboat harbor and the Seattle Yacht Club is aiding the workboat men in every

SEATTLE—A PICTURE OF REGATTA DAY AT THE COURSE OF THE ROYAL VANCOUVER YACHT CLUB
The background and surroundings are picturesque

possible way. The project will be placed before the United States engineers and early action is promised.

It is certain that it will create an added interest in sailing now that the yacht club will have direct access to the Sound, and it will be simple, too, for owners of auxiliaries to begin a cruise into the north.

The sailing meet at Vancouver will be of interest to the entire Pacific Coast and the eyes of all sailboat men will be turned toward the northwest. Entries are promised from all up and down the coast, and it is believed that the battle this year will not necessarily evolve into a joust between Sir Tom and Lady Pat of the Royal Vancouver Yacht Club.

Besides that in racing sailboats, there is an added interest lately in the auxiliary yawl and we speak of this as if it were a new thing. Comparatively, on the Pacific Coast and to define further, the northern half of the Pacific Coast, it *is* a new thing.

A typical Seattle auxiliary yawl might be described as follows: a 30-footer with a length at the waterline of, say, 21 feet, a beam of about 8 feet, and a draught of 4 or 5 feet. Construction, in this territory, would probably involve fir keel and keelsons, oak frames, and teak trim, and a planking of Alaska yellow cedar, and the deck canvas covered and painted.

Contrast with this little model a 140-footer with auxiliary power of twin 120 h. p. Diesel engines and designed for Arctic exploration. This boat—not hypothetical, but designed recently at Seattle and built at Tacoma—has a sail-area of about 8,000 square feet.

Between these two, one will find many types and sizes of auxiliary yawls and schooners, but not a great number in each category. Seattle is more inclined toward motorboating at this time. One fact, however, is encouraging: about the Lake and Sound one sees innumerable dories with a square sheet raised on a single pole and admirably manned by youngsters of the grammar school age. Take the particular instance of Jack Graham. He is a sixteen-year-old boy who had just such a boat as described above; but presently he graduated into the juniors of one of the yacht clubs. On an important sailing day Ted Geary, skipper of the Sir Tom, happened to be out of the city defending

SEATTLE—A STAR BOAT BEATING ITS OWN WAY HOME FROM A RACE

another cup, in another race, and for that reason was unable to sail his own boat. Sixteen-year-old Graham easily and gracefully took Sir Tom to victory. These youngsters are the yachtsmen of tomorrow; it is upon their shoulders that the yachting future of a new city like Seattle rests.

It is difficult to speak of Seattle sailing without encroaching upon Southern California or British Columbia. The former, of

Sir Tom—One of the Most Admired Boats at Seattle

course, is well known for its sailing craft, and the latter is ever present at any contest where boats run prettily in the wind. Whenever one or the other holds a regatta, there you will find Seattle entries. The Pacific Coast Yachting Association has made the Coast inseparable in this regard.

In an International Regatta we may find from Seattle the following craft in the Lipton class: Commodore Fritz Hellenthal's Gwendolyn II; Stanley Griffith's Gazeka; William Hedley's schooner Sinbad; and others. In the sloop racing class, Ellis

Provine's Gwendolyn I is perhaps the outstanding boat. Of the large yawls, Hellenthal's craft has pretty much her own way at northwest regattas. The Sir Tom is not noted for her performance in heavy weather, but this is her one weak point.

The younger generation inclines toward the Star Class and catboat types, and many of these can be seen on the Bay or on Lake Washington when sailing weather is at par.

The favorite northwest sailing course is that of the Royal Vancouver Yacht Club, where Seattle boats often go to compete with the Canadians. But courses around some of the Sound

SEATTLE—R-BOATS ARE VERY POPULAR ON THE ENTIRE PACIFIC COAST

islands, such as Vashon, serve excellently for local contests. Cowichan Bay offers an excellent setting for a sailing event.

In conclusion, sailing is on the increase rather than on the decline at Seattle. Primarily a motorboating country, it is coming to realize the sport of sailing. The ideal, of course, is the compromise; the auxiliary, except for the racing craft which are built for speed under the race rulings. As a prominent eastern yachtsman put it: "Now that I am in the West I want a boat, just as I wanted, and had, a boat in the East. Common sense tells me that I should have a motor in it. Yet I probably will have a couple of sticks on her. I should hate to think of my children growing up not knowing what a halyard was."

SEATTLE—START OF A RACE, FOR CRUISING BOATS, IN 1927, AT COWICHAN BAY

That is the feeling of many yachtsmen born and raised on the northwest coast. It is too bad if the younger generation doesn't get to know sailing. That is why the Seattle Yacht Club is adding a sailing branch on salt water. That is why more and more interest is being taken in the beautiful R-boats. In seeking something new, Seattleites are going back to the glory of the Vikings—and the sails.

MODEL YACHT BUILDING

By Charles Z. Klauder

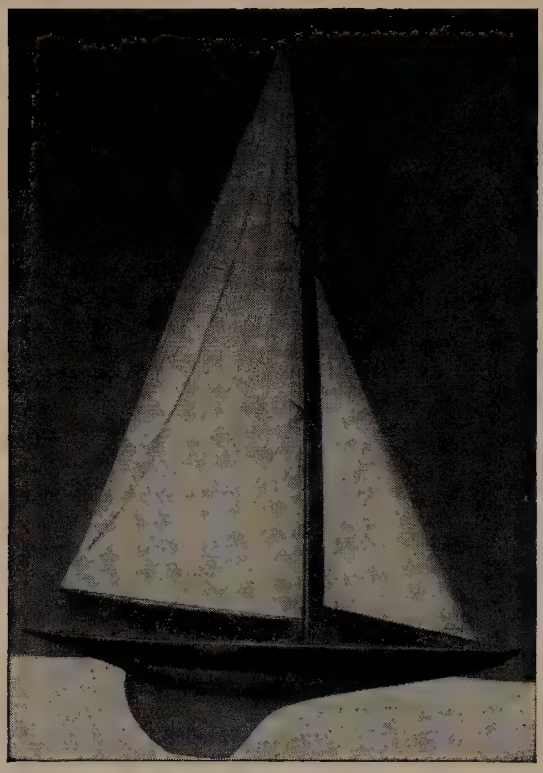
OF course, it is trite to say that people are various, but is not the proof of that exemplified in the case of the author, who, being strenuously engaged in the profession of architecture, is not content with the designing of buildings and must seek model yacht building as a recreation?

What is to be thought of a person who, despite his absorbing activities, finds lurking in the back of his mind thoughts of the sea, with its many manifestations, and an urge to be part of them, and who satisfies this longing by constructing model boats? On the other hand, it may be that like qualities are inherent in the designing of buildings and boats, for it has been said that architecture has the attributes of firmness, commodity, and delight. Similarly, marine architecture has these same qualities, inasmuch as boats must be firm, must shelter people, and besides being beautiful, they must be capable of motion, and in most cases swift motion.

Just as good architecture expresses pleasantly and artistically the practical and technical requirements of buildings, in like manner one hopes and trusts that beautiful hull and sail plans denote the same for boats. In any case, no one can observe a fine Gardner designed yacht without being conscious of its beauty. Is that not sufficient reason for attempting to create a thing as beautiful? If all this is digressing, it may also be the impelling cause and reason for what follows.

Starting from a small beginning, but with a mind trained in presenting intricate forms in graphic, but tight methods, it was not difficult to visualize the surface which would result from the drawings. After the designs, a model was built on the bread and butter form, with the inside as smooth and carefully executed as the outside surface, and the result a fairly good object to look at.

As time progressed and vision expanded, it seemed possible to construct a model which could be made to float on a preconceived waterline to conform to racing rules, and to be not only an object fair to look upon, but also an exact replica of the thing which it was made to represent. To attain such a result was only half the intention in the last of the models constructed, for to be perfectly satisfactory to the owner, the boat had to have the ability to sail. The result is a model 36 inches on the load waterline, representing a racing boat of the P-class, at a scale of 1 inch to the foot, made in accord with the designs of the larger boats of which it is a model, and being proportionately of the same length, width, and draught, and made to carry the same proportionate sail-area, but to have its centre of gravity so low that it would sail in competition with other racing models of the same size.



Mr. Klauder's P-Boat Model

It might be well at this place to say why it is necessary to have the centre of gravity lower in the model than it is in the larger boat, which the model represents. Everyone familiar with sailing full-sized craft and models—or, to put it another way, anyone familiar with sailing a large boat as well as a small one—knows that in any given velocity of wind the larger boat has greater stability than the smaller one, everything being equal and proportionate. It is well known that a boat of 75-foot waterline length stands up with as little difficulty in a 30-mile breeze as an 18-foot waterline boat does in a 15-mile breeze.

Technicians will describe the reason for this in order that it may be understood, but this article simply calls attention to

the fact that a small model of a large boat must be made more powerful, if it is to sail. This power is obtained by lowering the centre of gravity, without altering the proportionate displacement—or, expressed another way, the form of the cavity the model makes in the water.

Another factor which seems particularly interesting (and which is like so many mathematical verities which seem so incomprehensibly perfect) is the law discovered by an English engineer to the effect that the speeds of a large boat and its models are as the square root of their waterline lengths, but not, be it understood, if these two are sailing in the same velocity of wind. This in the case of the two would have to be proportionate; as an example, a boat of 100 feet in length might under certain conditions sail 10 miles, while its model of only 4 feet in length would make 2 miles.

One can readily see that in the respective velocities of wind applied to the larger boat and its model, the smaller boat by reason of its slower speed would have to withstand a firmer pressure. In going the two miles the model would be almost as if anchored. Whereas the larger boat in sailing on the wind and making its greater speed would be reducing, by this speed, the resultant of the pressure of wind upon its sails. It has been said that this discovery for determining speeds was found to be so perfect that governments constructed trial tanks, with the thought in mind that models could be tried out and speed tested to demonstrate what might be expected of the boats, of which they were small replicas.

Having mentioned some of the reasons why a model, if it is to sail, should be more powerful than the larger boat of which it is a model, and in order to have its lines in every particular conform to the lines of the larger boat, it was necessary to have recourse to some extraordinary means. These were found in constructing the entire model of balsa wood, and when it is realized that such a wood weighs only 7 pounds to the cubic foot as contrasted with a light wood like white pine which weighs 25 pounds to the cubic foot, it is not difficult to see that the difference in weight could be placed in the leaden bulb in the bottom of the keel.

It was found that the displacement of a P-boat is such that when reduced in proportion to one inch scale, the model would have to weigh about 17.75 pounds, or displace the equivalent of that weight in water, the lead on the bottom of the keel weighing just 80% of the total weight, or 14.2 pounds. The boat itself, with its sails, its masts, and all its fittings, weighed the difference, or 3.55 pounds.

It is well known that a very low centre of gravity in a large boat would cause it to roll so violently that it would be a failure, but in a model intended for sailing a low centre of gravity seems imperative where speed is required. Be it understood, although reiterated, that the object was to calculate for displacement, to ascertain minutely the weight of all necessary parts of the hull, and make them equal the displacement desired, which is, of course, exactly what is done with real racing craft by the men who design them. The hull of 3/16 inch thickness was intended to offset the weight of the proportionately thinner shell of a larger boat and its ribs in each foot of skin surface.

It may not be amiss at this point to describe briefly the operation of constructing such a model. After deciding the size and type of the model, a 36-inch waterline P-boat type, on a scale of 1 inch to 1 foot, resulted. The weight of the large boat being known, the differences in scale cubed 12 x 12 x 12, provided the factor 1,728, which, when divided into the weight of the larger boat, disclosed the desired weight of this model as 17.75 pounds. Cross sections, waterlines, and buttocks or longitudinal sections were then drawn and redrawn, until, after ascertaining the area of the cross sections and applying Simpson's rule, the displacement was found to equal 1,775 pounds desired. The formula used also gave the exact location of the centre of buoyancy.

The waterlines were drawn, to scale, every 12 inches, and the boards were marked both inside and outside, and then sawed to these lines. When sawing the inside line, inside connecting sections were left as part of each board. The centre pieces had holes bored at each cross section or station along the centre line, in order that the boards might be dowelled together so as not to

An Old Time Model Boat Builder

slip when being glued. Each board was one inch thick, of balsa wood, glued on each side of a mahogany strip, the purpose of which was to have a hard piece of wood (balsa being very soft) to form the stem of the model, and to support the rudder well. The pieces of mahogany were of different widths in the various lifts, so as to form a bond.

The calculations for the drawings of the keel were made in the same manner in which the hull displacement was determined. As the centre of gravity of the keel was to be in line with the centre of buoyancy of hull displacement, many trials were necessary to obtain this; thus assuring that the hull would float on the desired waterline.

After the model was completely finished, and the calculation disclosed the size and shape of the lead, the bottom portion resembling the form of the lead was cut off and used as a cast for the lead. As it was known that the metal would shrink in the mould, it was necessary to paste paper to the pattern to enlarge it to take care of the shrinkage.

Balsa wood is so soft it will not hold a screw, consequently all deck fittings had to be bolted through with nuts on the back. For a P-boat the lightest of the very fine hollow masts would weigh about 500 pounds. The mast on the model, made of balsa wood and wrapped with four layers of strong paper, twisted about it one layer at a time in barber pole fashion, is equivalent in weight to 438 pounds, and without loss of the necessary strength. When varnished after each layer was applied, and the last coat polished with pumice stone and oil, the surface of the mast was so fine and smooth it had the appearance and character of old ivory.

Yacht models are roughly divided into several classes, known as:—designers', builders', tank test, ornamental, and sailing. The designers' models are usually really half models. They were not only indispensable for the rule of thumb builders of years ago, but are also necessary for the present-day designer and builder. Norman L. Skene, in his book, *Elements of Yacht Design*, and Charles G. Davis, in books published by the Marine Research Society of Salem, Mass., have so thoroughly covered the build-

ing and designing of model yachts that I cannot do better than to advise those interested to look up these valuable publications.

In this short sketch, I have endeavored in a manner not too technical to describe the building of models as done by a busy man, who obtains diversion and recreation out of this kind of avocation.

EDITOR'S NOTE ON MODEL YACHT BUILDING.—To state that the man who wrote this paper is Charles Z. Klauder, the architect, is, in itself, sufficient introduction. In American architecture Mr. Klauder stands out prominently as a person of high attainments in his profession. The many awards he has received from societies in this country and abroad show how well his designing is appreciated by the general public and fellow architects. Mr. Klauder represents the very best combination of architect and artist, and when these characteristics are coupled with good understanding of craftsmanship, we indeed have an all-'round man. His fondness for doing things with his hands as well as his mind, led him, of course, to the building of model yachts, and the result of this desire and ability is to be found in several beautiful models.

In this modern time with its scientific designing of hulls, and with its serious study of aërodynamics of sails, and the use of model boats, in tanks, to test the speed under varying conditions, it is well to go back and have a look at a letter written by Benjamin Franklin, one of the world's greatest minds. One hundred and sixty years ago he used, for experimental purposes, a tank and model boat to prove a theory. Here is the famous letter written by

BENJAMIN FRANKLIN TO SIR JOHN PRINGLE:

Craven Street, May 10, 1768.

SIR,

You may remember, that when we were travelling together in Holland, you remarked, that the trackschuyt in one of the stages went slower than usual, and inquired of the boatman, what might be the reason; who answered, that it had been a dry

season, and the water in the canal was low. On being again asked if it was so low as that the boat touched the muddy bottom; he said, no, not so low as that, but so low as to make it harder for the horse to draw the boat. We neither of us at first could conceive that if there was water enough for the boat to swim clear of the bottom, its being deeper would make any difference; but as the man affirmed it seriously as a thing well known among them; and as the punctuality required in their stages, was likely to make such difference, if any there were, more readily observed by them, than by other watermen who did not pass so regularly and constantly backwards and forwards in the same track; I began to apprehend there might be something in it, and attempted to account for it from this consideration, that the boat in proceeding along the canal, must in every boat's length of her course, move out of her way a body of water, equal in bulk to the room her bottom took up in the water; that the water so moved, must pass on each side of her and under her bottom to get behind her; that if the passage under her bottom was straitened by the shallows, more of that water must pass by her sides, and with a swifter motion, which would retard her, as moving the contrary way; or that the water becoming lower behind the boat than before, she was pressed back by the weight of its difference in height, and her motion retarded by having that weight constantly to overcome. But as it is often lost time to attempt accounting for uncertain facts, I determined to make an experiment of this, when I should have convenient time and opportunity.

After our return to England, as often as I happened to be on the Thames, I inquired of our watermen whether they were sensible of any difference in rowing over shallow or deep water. I found them all agreeing in the fact, that there was a very great difference, but they differed widely in expressing the quantity of the difference; some supposing it was equal to a mile in six, others to a mile in three, &c. As I did not recollect to have met with any mention of this matter in our philosophical books, and conceiving that if the difference should really be great, it might be an object of consideration in the many projects now on foot for digging new navigable canals in this island, I lately put my

design of making the experiment in execution, in the following manner.

I provided a trough of plained boards fourteen feet long, six inches wide, and six inches deep, in the clear, filled with water within half an inch of the edge, to represent a canal. I had a loose board of nearly the same length and breadth, that being put into the water might be sunk to any depth, and fixed by little wedges where I would chuse to have it stay, in order to make different depths of water, leaving the surface at the same height with regard to the sides of the trough. I had a little boat in form of a lighter or boat of burthen, six inches long, two inches and a quarter wide, and one inch and a quarter deep. When swimming, it drew one inch water. To give motion to the boat, I fixed one end of a long silk thread to its bow, just even with the water's edge, the other end passed over a well made brass pully, of about an inch diameter, turning freely on a small axis; and a shilling was the weight. Then placing the boat at one end of the trough, the weight would draw it through the water to the other.

Not having a watch that shows seconds, in order to measure the time taken up by the boat in passing from end to end, I counted as fast as I could count to ten repeatedly, keeping an account of the number of tens on my fingers. And as much as possible to correct any little inequalities in my counting, I repeated the experiment a number of times at each depth of water, that I might take the medium. And the following are the results:

Water 1 1/2 inches deep	*2 inches*	*4 1/2 inches*
1st exp. 100	94	79
2. 104	93	78
3. 104	91	77
4. 106	87	79
5. 100	88	79
6. 99	86	80
7. 100	90	79
8. 100	88	81
813	717	642
Medium 101	Medium 89	Medium 79

I made many other experiments, but the above are those in which I was most exact; and they serve sufficiently to show that the difference is considerable. Between the deepest and shallowest it appears to be somewhat more than one-fifth. So that supposing large canals and boats and depths of water to bear the same proportions, and that four men or horses would draw a boat in deep water four leagues in four hours, it would require five to draw the same boat in the same time as far in shallow water; or four would require five hours.

Whether this difference is of consequence enough to justify a greater expence in deepening canals, is a matter of calculation, which our ingenious engineers in that way will readily determine.

I am, &c.

B. FRANKLIN.

THE YAWL

By William M. C. Kimber

MY first boat was a 6-foot scow; and what a scow at that! Short and fat, unlovely to look at, but a gem in the eyes of its fourteen-year-old builder. At first it was paddled; next came a scull hole in the transom. Then followed rowlocks, and in due course a centreboard and a sail—leg-of-mutton, of course, but capable of driving the "Turtle" almost anywhere a boy wanted to go. One characteristic, however, was sadly lacking: the ability to point and even come about without much coaxing.

My wisdom as a designer in the early nineties did not cover the niceties of relation between centre of effort and of lateral resistance, but I knew I had not enough aftersail. The obvious remedy was to make it, and the easiest way, as I hated to spoil my nicely cut leg-of-mutton, was to rig a small mast in the stern transom, a burnkin stayed to the quarters and a diminutive replica of the mainsail for a spanker. Crude it was, to be sure, but it was a yawl and with most of the advantages I have since found characteristic of that rig. One of the first things I found was that I could steer the boat within wide limits by proper handling of the mizzen sheet, and that, by trimming it to a nicety, she would sail a course without a hand on the tiller.

For those unacquainted with this rig, a short description is in order. The yawl rig is used mostly on yachts running up to

60 feet in length. It calls always for two masts, the mainmast forward and the mizzenmast, or jigger, aft of the sternpost or rudder. The mizzen is about two-thirds the height of the mainmast. The rig may or may not include a jib. A yawl without a jib is a cat-rigged yawl and is not so common; and, in handling, it lacks some advantages of the type with jib or jib and staysail. The combined area of the jib and jigger is usually about one-half that of the mainsail. The jib and jigger areas are approximately equal. It might be stated here that a ketch is simply a yawl rig with the mizzenmast stepped forward of the rudder.

A yawl, up to 40 feet, is easily a one-man boat if rigged properly. In speaking of the characteristics of this rig, I draw from my experience in sailing a number of boats of this type, my present yawl being a beamy 40-foot boat designed and built by Daniel Crosby of Osterville, Mass., famous for years as the builder of Crosby catboats.

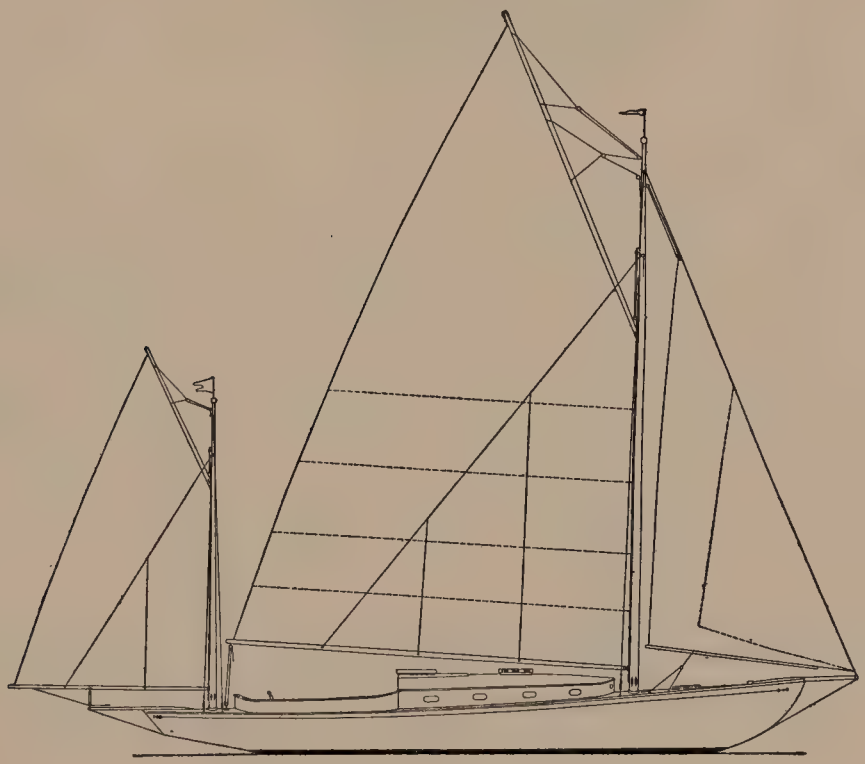
Perhaps the outstanding feature of the yawl rig is its ease of handling under all sorts of trying conditions. If you are lugging all the sail she'll stand, and it continues to breeze up, no thought of reefing comes up, for you simply lower away your mainsail and continue under jib and jigger perfectly balanced. If desirable, the mainsail may be reefed and hoisted without the necessity of laying to. A well-balanced yawl will sail equally well under mainsail alone, handling just like a cat-rigged boat. And speaking of balance, I have sailed for hours, in long runs, having trimmed my mizzen sheet properly, without touching the tiller.

Another feature of this rig is its distinct advantage in laying to. With the jigger trimmed flat and with jib and mainsail down, or sheets started, the boat will lie practically dead into the wind. This feature is of great advantage in getting out of a crowded harbor, as your yawl, with jigger flat, will drift dead astern without tending to fall off, as would a sloop or cat-rigged yacht.

Again in coming to anchor under the same conditions, you may shoot up to the desired position, drop your hook, and rely on your yawl going straight astern until you wish to snub her. The jigger will also come in mighty handy in laying to in a heavy

sea. This is especially valuable to the lone sailor when countless things may happen that will call him from the wheel.

A book such as this, describing various rigs, would obviously have its usefulness impaired if only the advantages of each rig were laid bare by its admirers. Much as I believe in the yawl rig, particularly for cruising and offshore work, I concede that it has at least one weak point. This is inherent in most cats



Mr. Kimber's Own Yawl

that I have sailed, as well as yawls. There is too much sail aft of the stern, too far outboard to handle easily in reefing and furling. This used to be true, too, of sloop and schooner-rigged yachts, but modern tendencies toward high, narrow sails, have brought the clew of the sail inboard. Marconi-rigged cats are also better in this respect, but in a yawl, with its jigger rigged aft of the sternpost, there is little chance for much of a sail if it does not extend well beyond the transom.

In the ketch rig, with jigger mast forward of this wheel, this

difficulty is not so pronounced, but offsetting the advantage is the fact that the jigger boom has to be swung very high to clear the head of the steersman. This gives rise to a certain awkwardness in the appearance of the ketch rigs which is not present with the yawl. Another weakness, in the eyes of some, would be the fact that yawls are not so fast as a boat of the same model with sloop rig. Except for racing, this disadvantage is practically nil, so let the yawl hold to its place as a boat primarily designed for comfort and ease of handling under all conditions of wind and sea.

As a cruising boat, let us consider the general characteristics we would want in a yawl. We want to be able, say, to cruise inside or offshore from Maine to Florida. We also want her for family sailing, where often the skipper combines in himself the whole effective crew. In a boat about 40 feet O. A., and preferably not long overhangs, as many as five persons may be berthed with a reasonable degree of comfort. With this length a good beam of 12 feet may be carried, getting good stability without great depth. Four-foot depth with shallow, long keel and outside ballast will give you entrance to all government-dredged inside waterways. With this depth, and a good freeboard of 30 inches amidship, full 6-foot headroom may be obtained without making the trunk cabin too high for looks. The cockpit should be ample, say 8 x 8, with comfortable seats,—and self-bailing, of course. Much as some of us old sailors hate it, "gas" is mighty useful at times, and a yawl with a small auxiliary engine, fitted either under the cockpit or in the cabin, comes not far from being the ideal small cruiser. Especially with this in view, make your rig reasonably small: 750 feet total area, with 500 feet of it in the mainsail, will give a sail spread that, with a good stiff boat, may be carried through half a gale without worry.

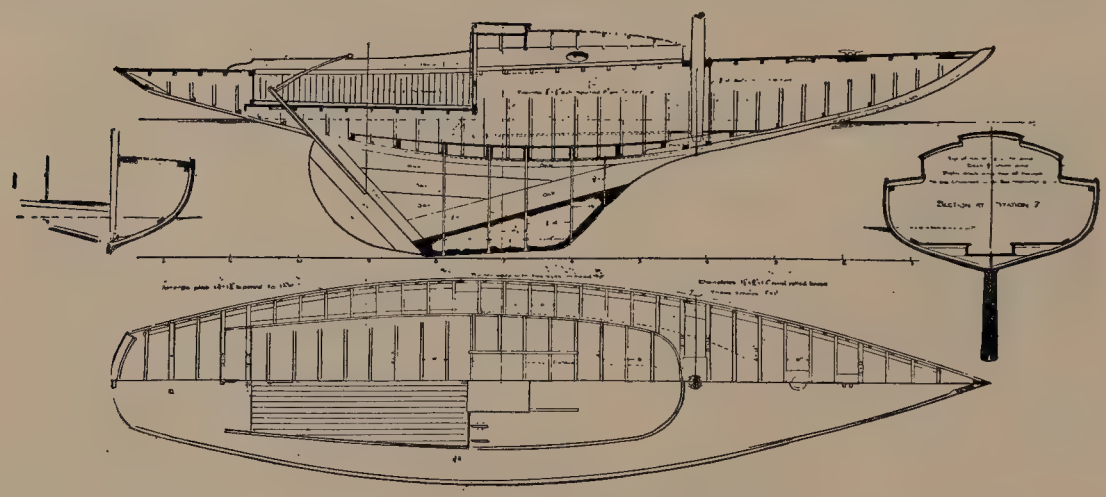
THE DARK HARBOR SEVENTEEN AND ONE-HALF FOOT CLASS

By Robert E. L. Johnson

THE original Dark Harbor Class centres around Dark Harbor and Gilkey's Harbor, Islesboro, Penobscot Bay, Maine. Many slight variations have been made to adapt the class to various conditions and to meet the ideas of different sailors. This class is nearly identical with the well-known Manchester 17½-footers. Both types are designed by B. B. Crowningshield of Boston, and the Dark Harbors are built by Rice Brothers Corp. of East Boothbay, Maine. The dimensions are length over all 25 feet, 10 inches; length of waterline 17 feet, 6 inches; beam 6 feet, 3 inches; draught 4 feet, 3 inches. They have sail-area in square feet of 311, the mainsail having 245, and the jib 66. All of this class at Islesboro and Mt. Desert Island still carry the original gaff rig, though the Manchesters have adapted the modern jibheaded rig.

The construction of the hull is very substantial, with oak frames and keel, while the planking is of white pine. Just aft of the mast is a low trunk cabin, with about 3 feet, 6 inches headroom, in which two persons can sleep rather comfortably. The self-bailing cockpit is approximately 6 inches long. There are no seats in most of the boats, as they interfere with the efficient handling of the various ropes. Water-tight bulkheads have been built into the bow and stern on some of the boats, making them practically unsinkable.

The craft were built primarily to meet general conditions on the Northern New England coast. They appear at their best in light winds though they can hold their own under nearly any weather conditions. Yachtsmen at Northeast Harbor, Maine, have had an unusual opportunity to compare the Dark Harbor boats with several other well-known racing classes and the general conclusion reached is that the boat is primarily a light wind boat. The Northeast Harbor Fleet records verify this statement. In the past three Hayward Cup Races, in which five classes have raced together on time allowances, the Dark Harbor boats have



LINES—DARK HARBOR SEVENTEEN AND ONE-HALF FOOT CLASS
Designed by B. B. Crowningshield

shown their heels to the fleet under light weather conditions, but did not fare so well in heavy weather.

The outstanding characteristic of the class is unusual speed before the wind and in reaching, though this does not imply that they are slow to windward. Fast when running, they are often bothered by a strong wind on a beat. Positive comparisons between classes is always a dangerous undertaking, but long experience in racing these boats under all conditions has proven their speed in light weather and smooth sea.

The best known variation of the Dark Harbor class is the Bar Harbor 17½-foot class. The hull and sail plan are identical with the Dark Harbor craft, but the cabin has been shortened

and the self-bailing cockpit has been removed in order that seats with full leg-room could be installed. The shorter cabin enables the crew to place their weight in more advantageous positions without the necessity of lying full length on deck, thereby saving the crew from a soaking. Forward of the mast the watertight bulkhead renders the boat absolutely safe.

Another departure is keeping the long cabin but doing away with the self-bailing cockpit, which has only one advantage: that

VENTURE—WINNER CLASS B 1927 NORTHEAST HARBOR FLEET

of comfort, to the impairment of the successful racing plan. After having raced in each type, the writer has reached the conclusion that the Bar Harbor boats are the best for racing and day sailing, while the Dark Harbor craft are far superior for short cruising.

The Dark Harbor-Bar Harbor class is very well known along the Maine coast. In nearly every harbor may be seen at least one of these boats, but the majority are centered at Islesboro and Northeast Harbor. At Islesboro nearly forty of these craft

race several times a week during the summer, and the class is so large that it is divided into two sections for every race. Events here are under the direction of the Tarratine Club.

Members of the Northeast Harbor Fleet have bought up almost all of the Bar Harbor boats as well as several of the other types, so that there are about twenty boats in the so-called B class, open to any Bar Harbor, Manchester, or Dark Harbor

DARK HARBOR SEVENTEEN AND HALF-FOOT CLASS NAVAJO "OLD SAILS"

17½-footer. There are also classes at Sorrento and North Haven, Maine, each of which has about ten boats.

Several series of inter-club races between the Junior members of the Tarratine Club and the Northeast Harbor Fleet have been held, and much to the chagrin of the skippers from Mt. Desert, the Islesboro boys have won every series by a narrow margin. Such races arouse greater interest each year and are an incentive to the development of the class. The keen young

sailors who man this class anticipate that a Junior Championship of Maine may be staged in the near future by the Northeast Harbor Fleet.

EDITOR'S NOTE.—Mr. Johnson, being only twenty-two years of age, is another of the younger school of American sailors. The sailing world is so full of old-time salts, and they do so much talking, it is almost impossible for those not familiar with the game to realize that a young man could be able to sail and, further, write about the subject of boats. During the season of 1927 many of the most coveted trophies were won by men and boys from sixteen to twenty-three years of age.

Mr. Johnson has done most of his sailing in Maine waters, and with the Navajo, a Bar Harbor 17½-footer. He won first place in the July and August series of races of 1927, and many other races in 1925 and 1926. In the Davenport-Hayward Memorial Cup Race of 1925–26, in which there were at least fifty starters, Mr. Johnson won first place in both contests.

He was the Captain of the Northeast Harbor Fleet, Inter-club racing team, 1924 and 1925, and was Secretary of that fleet in 1926. In addition to serving as chairman of race committees various years, he is an enthusiastic cruiser, and in the Dreamer, a 48-foot yawl, has visited most of the available points in New England waters.

His paper describes a very interesting class of boats, that have proven themselves good under almost every condition.

THE ATLANTIC CITY CATBOATS

By William Wood and Bennet C. McNulty

ATLANTIC CITY needs no introduction as the capital city of New Jersey's serrated, seductive and sandbar-guarded seacoast, endowed bountifully by its natural topography and enriched by mankind's artifice to a degree that probably justifies some such sub-title as "America's Playground." Salt water stretches between its teeming avenues and the mainland. Skippers sailing coastwise find their inland waterway in back of the Atlantic City bar.

Today Atlantic City is one hour from Philadelphia and three hours from New York by steam train and the piercing of New Jersey's pine woods by the railroad pioneers back in 1853 is the date from which Atlantic City's history starts. Then the place was a desert waste. Now the annual number of visitors is estimated at about 10,000,000, making it probably the most visited seaside city in the world.

Before the railroad laid its fingertip there, dangerous shoals kept craft of all kinds from coming near the sandbar that supports today's seacoast capital. Each year the deceptive shallows took their toll of wrecks from the ocean's floating population. Today the same topographical features, because of man's handiwork, provide the landlubbers with their bathing beach and the seagoers with their channel from inland waterway to high seas.

On the Yachtsman's Map, Atlantic City, with its lighthouse

Photo Aero Service Corp.

PICTURE OF ATLANTIC CITY FROM THE SKIES

167 feet high, is a port situated well towards the southern end of an inland waterway some 80 miles long. It is an anchorage with a quarter-mile-wide channel leading to the open ocean, combining for the skipper a place to hang up his hawser while he strolls the boardwalk; and, when he wants to go for a little sail on the old Atlantic, a well-buoyed corridor from anchorage to ocean.

From this city the inland waterway stretches north 60 miles to its terminus at Bay Head. Southward 20 miles brings the end of the waterway as well as the end of New Jersey—Cape May. The channel to the ocean is 3 miles long, measured from the main pavilion at the Inlet to the outermost buoy. A ridge of low sand-bar forms one wall of the channel, with the bathing beach and boardwalk on the other side.

The main anchorage is just off the Main Pavilion. It is one mile in diameter and landlocked. Gardiner's Basin and Clam Creek are additional anchorages of merit. Visiting yachtsmen must be advised of the swell at flood tide. The rise and fall of the tide is about six feet. Many a visiting yachtsman has moored his boat with a short hawser in, for instance, Gardiner's Basin, and upon his return from a boardwalk stroll, has found his lines parted or his cleats pulled out by the falling tide.

Like probably all other sailing localities, Atlantic City has evolved its own special design of boat, the design best adapted for local conditions and furnishing the maximum of speed with comfort, safety, and general enjoyment.

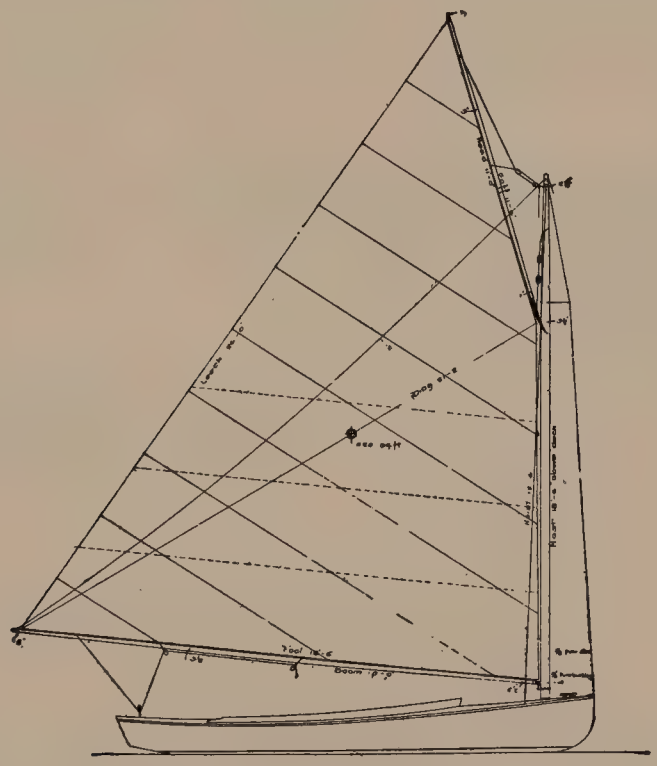
The boats making up the Atlantic City Catboat Class came with the reorganization of the Atlantic City Yacht Club in 1913. The aim was to provide a one-design racing class for the younger members. The boats are therefore about fifteen years old and the fact that most of them are still in good condition testifies to the worth of their design and construction.

In planning the class, the following considerations were regarded. First, the boats had to be inexpensive, easy to handle and reasonably non-capsizable, since they were for the younger members. This necessitated a small boat with a simple form of rig.

Secondly, the design and construction had to be sturdy, since they were to be sailed in Absecon Inlet, Great Bay, and even outside, in good weather.

Thirdly, they must be dry and comfortable, since racing was not to be their sole purpose. They were to be used for afternoon sailing and fishing as well as racing.

Finally, to fit the rather shallow inland waters of the locality, they had to be centreboard boats and of shallow draught.



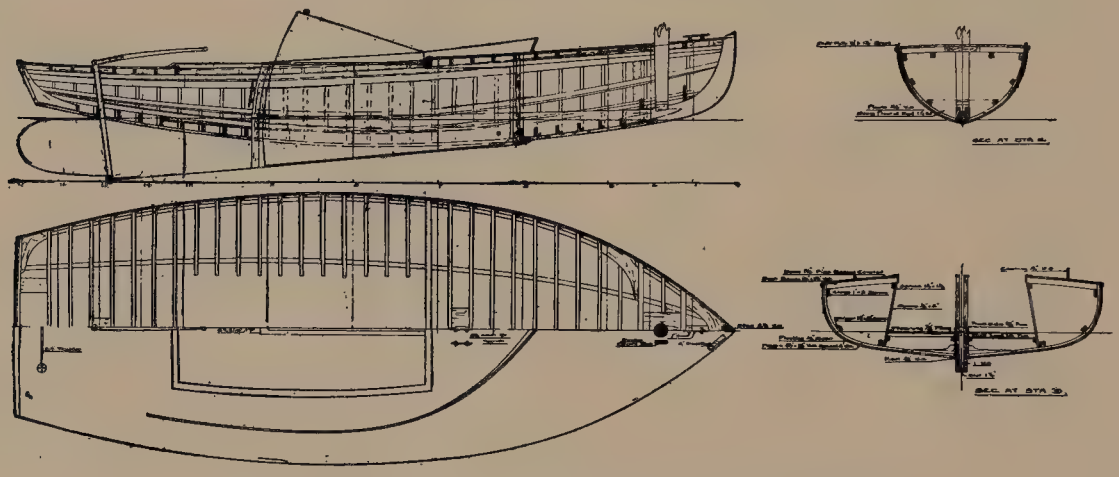
SAIL PLAN—ATLANTIC CITY CATBOATS
Designed by Bowes and Mower

Universal opinion is that the problems could not have been better met. The cost, in 1913, was between $440 and $480 complete. They are marvelously easy to handle, small enough so that little effort is needed to sail them, yet large enough to allow moving about in them without much trouble.

The only difficult feature we have ever noticed in handling them is in holding them on their course while quartering or running

before a strong breeze. This, however, is true of almost every design of catboat. Increasing the size of the rudder has helped remedy this. Shifting the crew aft and getting the stern well down in the water also helps.

Under ordinary conditions we believe the boats are non-capsizable. They will tip way over until the wind slips out of the top of their sails and then they will come up again when the wind slackens. Their wide decks and narrow cockpits enable them to do this without swamping. I have seen them upset, but only under some unusual condition, such as someone leaning out on the boom shaking a reef, or running aground.



CONSTRUCTION PLAN—ATLANTIC CITY CATBOATS
Designed by Bowes and Mower

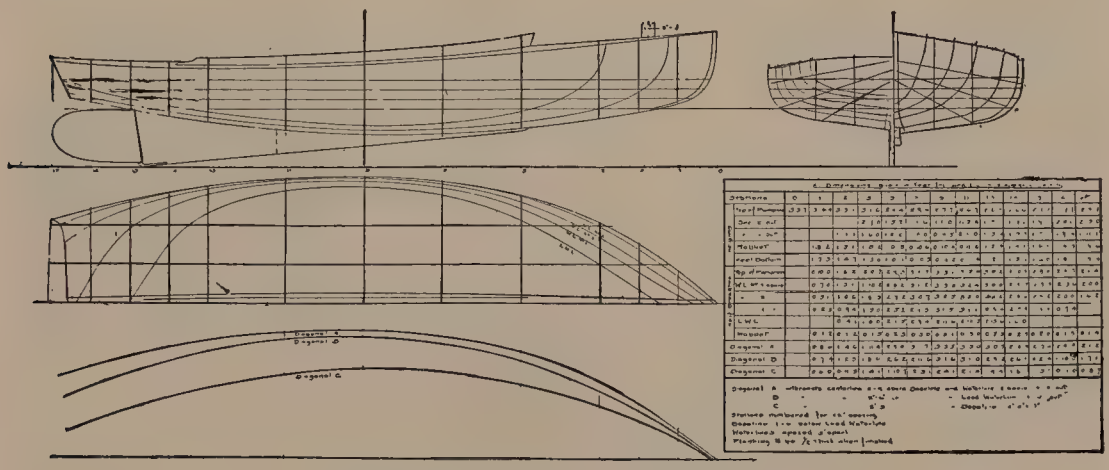
Their seaworthiness is unquestioned. They navigate the Jersey Inlets well, they go outside frequently at Atlantic City in good weather, and occasionally are taken out to Barnegat Inlet. They can stand anything on Barnegat Bay. They are as sturdy as possible for their size and type.

They are comfortable for three or four people and comparatively dry. Their draught is so shallow they can go almost anywhere a sneak box of the same size can go.

The velocity of the tides met at Atlantic City is about 4 to 6 knots per hour. The boats have the necessary ability to come about "on a dime", as they say. This is a great asset in

tacking in the back eddies formed by the tides sweeping around a point.

The boats were designed by Bowes and Mower, and built by the South Jersey Yacht Building Company, which at that time operated the yard now owned by Edward F. Jardine, at Atlantic City. The design was a development of the party boats used along the Jersey coast. Ten boats were built in 1913, all for Atlantic City. Later boats were built for Ocean City, Cape May, Long Point, etc. Altogether about forty catboats of the type have been built.



LINES—ATLANTIC CITY CATBOATS
Designed by Bowes and Mower

Only four of the original ten are still at Atlantic City. The others have been sold and moved from their native waters. Some have been taken to the Great Lakes. About a dozen of the type are on Barnegat Bay and so far as I know, Barnegat is the only place where they are now racing as a class. The Barnegat Bay Yacht Racing Association has found its event so sucessful in its first two years that there has been talk of building several new boats of the same design.

The class raced unofficially at Island Heights in 1923, 1924, and 1925 before the Barnegat Bay Yacht Racing Association gave them a place on its schedule. For many years about six or eight of them, accompanied by several larger boats, used to sail up to

Seaside Park, near the north end of Barnegat Bay, for a race every Sewell Cup Day.

Several of the boats have been used for cruising. A fairly good cabin is provided by a canvas cover slung over the boom, running the length of the boat and fastened down around the sides. Two small mattresses along the centreboard make good bunks. In light breezes they sail best without any ballast and

ATLANTIC CITY CATBOAT
At a dangerous angle

with as small a crew as possible. When it blows, ballast or crew is absolutely necessary.

We have seen captains enter races alone and without ballast, depending on the light wind to continue throughout the race. If they guess right, they can usually work out a nice lead, but if the wind picks up they begin to knock down. They are able to hold their own pretty well running free, but it does not take much windward sailing to lose them their original advantage.

It is playing safe to carry the proper weight, either ballast or crew. Sandbags are preferable to live ballast, because if you

want to take advantage of a light wind for a fast finish, the rules permit you to chuck your sandbags overboard. The best racing ethics forbid you to dispose of your crew in this manner.

In heavy winds the boats can be hauled very close and will still foot fast. They also can be driven to advantage. Full sail and four in crew can usually beat one reef and a crew of three. It is hard on the boats, but it wins races.

ATLANTIC CITY CATBOATS
Fair wind—Bow view

A larger rudder, such as has been installed in many of the original boats, is about the only improvement on the original design to be recommended. Perhaps stronger construction in the bow and about the mast step is desirable, since most owners have trouble keeping their boats absolutely tight in the bow. Back stays might be a nuisance, but we have often thought they would make running free much more pleasant and less worrisome.

The original sails were of 5-ounce Fowell or America yacht canvas. There is one gaff headsail, 11 feet at the head; 12 feet, 6 inches on the hoist; 18 feet, 6 inches on the boom, and 26 feet

on the leech, with a diagonal of 21 feet, 2 inches. The total area is 228 square feet.

The movable centreboard has been discarded by many owners, but we find it very useful. Sailing to windward in a light breeze, the boat tends to have a lee helm. As the breeze freshens it develops a weather helm. The movable centreboard makes it possible to almost balance the boat or to have a lee or weather helm, as desired. In a strong wind with full sail it is impossible to move the board far enough aft to give a lee helm, but one can make the weather helm much easier.

The same principle is useful in overcoming the change made in the balance while reefing. We find it valuable, too, when racing in light winds, as a means of giving the "feel" of the boat, and in heavy winds when we do not want it to pull too hard.

ICE BOATING

By Edwin J. Schoettle

THE past of ice boating, like much of history, is very obscure. It is generally believed that the Dutch were the first to indulge in the sport and that it came down to them through a long line of ice-loving forefathers. For when one thinks of Holland in winter, does not one always picture the Holland of Hans Brinker—with the ice-covered canals, and the joyous children skating to school or their more dignified elders going to work in like fashion? It is indeed not hard to visualize the same people sailing their crudely made ice boats in ancient times over their well-frozen inland waterways. It is more difficult to imagine the pigtailed chinamen sailing over the ice, but it is almost certain they used ice boats in the days of long ago.

In Russia, Norway, and Sweden it is also a favorite winter pastime. The *Rudder*, February, 1910, published an article on Ice Yachting in Sweden, from which we take this:

"Ice Yachting has taken a strong hold in Europe, particularly in Sweden—the Stockholm Ice Yacht Club, for instance, having a fleet of over thirty-six boats, divided into classes as follows:

First Class: For yachts of more than 250 feet of sail—six boats.
Second Class: For yachts with 200 to 250 feet of sail—eleven boats.
Third Class: For yachts 150 to 200 feet of sail—six boats.
Fourth Class: For yachts of 150 feet of sail and under—thirteen boats, four of which used lateen sails.

It will be noticed that most of the boats are of the jib and mainsail type, it having been found that the lateen rig is not as effective for windward work as the jib and mainsail-rigged yacht.

" Most of the boats of the club mentioned are of the solid backbone type, with the exception of the Mavourneen, which is of the built-up type and owned by the Crown Prince of Sweden. The racing season starts at Stockholm early in December and usually ends in April. The race course is situated near the city of Stockholm, and the clubhouse is built on a scow. Probably nowhere in the world are conditions so perfect for ice yachting as at Stockholm."

It is interesting to note that in 1910 the royal families of Sweden and England took much interest in ice boating, the Crown Prince, Prince Arthur of Connaught, the Crown Princess, and Princess Patricia all owned boats which they sailed and handled.

Ice boating has been followed nowhere so diligently and with such keen love of the sport as in the United States and Canada. Among the many places on the North American Continent where the sport is enjoyed may be mentioned the Great Lakes, those magnificent bodies containing thousands of miles of frozen water, situated on the border lines between the United States and Canada. The lakes of New York State, Minnesota, and Wisconsin, many in number, large in area and beautified by their surroundings, present wonderful opportunities for the enjoyment of the sport. The Hudson, one of the most attractive rivers in the Western Continent was, years ago, before the days of such extensive commercial boat transportation, the scene of ice boating's greatest development. It was on the Hudson River that most of the well-known speed records were made by ice yachts. In addition to the measured course, nearly straightaway, the ice skippers had the opportunity of racing some of America's fastest steam trains, whose tracks follow the course of the river. It is said that business men desiring to go to New York City, who were unfortunate enough to miss the train at their own station, could, if conditions were right, take their ice boats and easily overtake the train at another station ten miles or more beyond.

The extensive bodies of brackish water along the New Jersey

Photo by Johnson Bros.

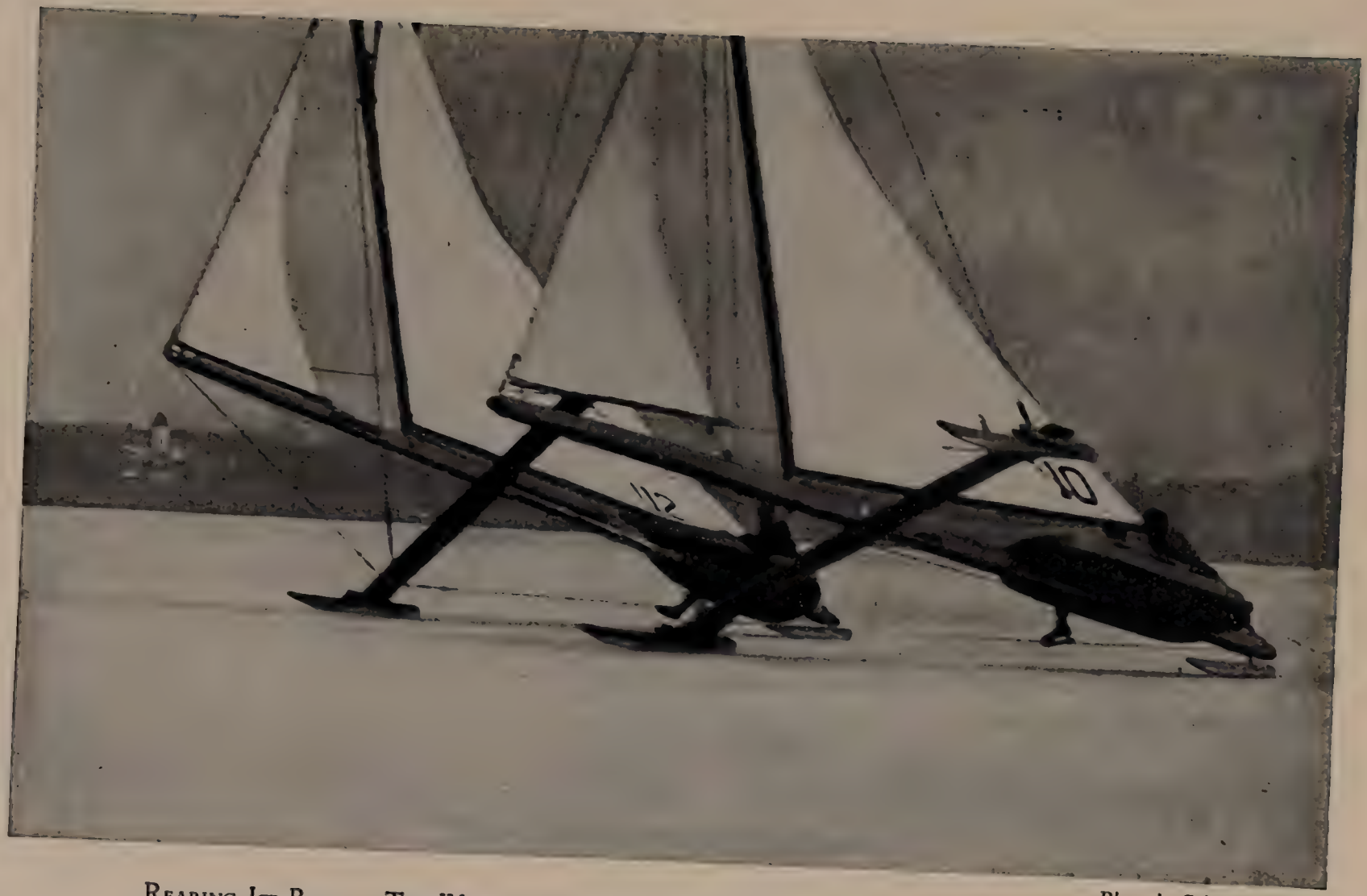
CLOSE-UP TO SHOW THE PALATIAL CABIN ACCOMMODATIONS OF ICE YACHTS

coast present the finest opportunities for ice yacht development. Barnegat Bay, with its 300 square miles of shallow water parallelling the ocean and separated from it by a very narrow strip of lowland, makes for quiet nights, to freeze the ice and windy days to drive the boats. Ice yachts on this body of water, unfortunately, are few in number because the location of Barnegat Bay is far from the built-up cities and inconvenient to reach in winter. The writer has on several occasions, enjoyed the pleasure and thrill of sailing over twenty miles of ice on Barnegat Bay in less time than thirty minutes. These experiences were all the more interesting when it was remembered that the same distances had been many times traversed during summer months in sailboats, but the great difference in speed made it necessary to calculate the elapsed time in hours instead of minutes.

The Shrewsbury River, located in the northern part of New Jersey, is the most popular place in America for ice yacht sailing and racing. The proximity of the towns of Long Branch and Red Bank, really on the river banks, and the short distance of thirty miles from New York City, help to make the Shrewsbury River the great centre it is. Although the water freezes during all ordinary winters, the temperature is rarely below 20 degrees at noon, and the majority of races are held during days that are just about freezing in temperature. This mildness of climatic conditions does more to make ice yachting popular there than any other feature. The more northerly waters freeze for a longer period, but the cold weather makes ice boating practically impossible.

The absence of great quantities of snow determines the character of the ice, and of course a yacht will travel with much less resistance and more speed over smooth, clear ice than over snow-made or snow-covered ice.

Those who wish to enjoy the sport of ice yachting must of necessity be hearty to withstand the exposure and exertion, and be prepared to take chances of accidents, due to cracks in ice, thin ice, open water, breaking spars, and spills that are more serious than those experienced when sailing boats of the water variety.



Rearing Ice Boats—The Windward Runner on the Leeward Yacht is Elevated Ten Feet

Photo by Johnson Bros.

The sensation at first is one of gliding through space, and for that reason the feeling is almost that of flying. Rough places in the ice that are impossible to avoid oftentimes make the gliding sensation rather bumpy, because it is to be remembered that ice yachts are not fitted with "elliptic" or "semi-elliptic" springs so often installed in automobiles. The hard steel runners fastened to the solid oak planks of yachts coming in contact with hard, rough ice create a jarring sensation that would "shiver the timbers" of any well-tarred salt, and make him wish for the calm and peace of a 40-mile gale at sea.

"Fascinating pastimes like yacht and boat sailing must sink into insignificance when compared with the fascinations of ice yachting, if speed alone be the cause of excitement. The mere idea of being conveyed through the air in a boat, at a rate equal to the speed of the fastest train, repels, rather than fascinates; however, those who have experienced the extraordinary velocity of an ice yacht say that when the first dread of the lightning-like flight is overcome, the longing for the fast travelling of an ice yacht becomes quite a fascination." Thus wrote Dixon Kemp, of American ice yacht sailing, in the fifth edition of his famous *Manual of Yacht and Boat Sailing*, published in 1886. In this connection it is rather interesting to note that in Kemp's first edition, 1878 (a copy of which the writer is fortunate enough to own), there is no mention whatever of ice yachting.

The great speed of ice boats is almost unbelievable, although it is made possible by strong winds and the little resistance the boat-runners make in their contact with the ice. The historic records of speeds attained by ice boats, on the Hudson River in New York, where the straightaway distances are great, were set down forty-three years ago by J. D. Jerrold Kelley in his book, *American Yachts*, published in 1884, and of which the following is an extract:

"In 1879 the Zephyr of the New Hamburg I. B. C. ran from Poughkeepsie to New Hamburg, a distance of nine and three-quarter miles, in ten minutes. On February 12, 1879, the Lucille, owned by Captain Winslow, sailed this distance of nine miles in seven minutes and ten seconds; the Snow Flake, 44 feet, 10 inches

long, ran the distance in seven minutes; and in 1882 the Haze made the same speed, at one point in the flight sailing two miles in one minute. In 1879, the Comet, Phantom, Zephyr, and Magic sailed, in company, ten miles in ten minutes, and for most of the time, so great was the force of the wind, they carried their windward runners elevated at an angle of forty-five degrees."

The Shrewsbury River in New Jersey does not offer the same opportunity for speed because the distances are not so great and the courses must be triangular in shape, necessitating windward and leeward work.

Frances Atwater, writing in the *New York Times*, January 29, 1927, gives some interesting figures on the speed of ice yachts when sailed on the Shrewsbury River. "Sailing between known landmarks or an even reach, the boats often attain a speed of more than eighty miles an hour. A mile in a minute and fifty-five seconds is an average speed running before the wind, but a greater speed is possible with a beam wind—a speed faster than the wind." The writer, not having had the pleasure of sailing an ice boat in a wind of greater velocity than twenty-five miles an hour, is not in a position to verify the speed figures by actual experience, but he sees no reason to doubt them.

As the boats of the dim past are sometimes more interesting than those of the present, a brief description, and the names of some of them and their owners, might well be introduced into this paper. Of the Hudson River fleet, the largest boat was the Icicle, 67 feet long, with a sail-area of over 1,000 square feet. Mr. Kelley gives the names of Arctic, Hail, Restless, Aeolus, Phantom, Avalanche, Zig Zag, Jack Frost, Whiz, Snow Flake, Flash, Advance, and Snow Bird. A careful consideration of these attractive, well-selected names will do much to acquaint one with the nature of the sport, and are in themselves descriptive. On the Shrewsbury, the famous boats were the Scud, with 850 feet of sail of the lateen type; Charles Throckmarton's Dreadnought, notable for being a cockpit and keel yacht; Captain George Coley's Idler; the Bob, owned by Messrs. Hubbard & Kendrickson; and Weaver's Kitty. These names were mentioned in the Atwater paper and it is interesting to note the gentleness

Photo by Johnson Bros.

MARCONI-RIGGED "PET" IN A FLAT SPOT WHILE "NOW THEN" RISES AND RESPONDS INSTANTLY TO A LIGHT PUFF OF WIND

of the names, as compared to the vigor of the names given the Hudson River boats. It must have been due to the mildness of the weather on the Shrewsbury and the severity of the weather on the Hudson.

The best known boats of the 1927 season at the North Jersey resort were:

Pick Up	owned by	Charles Burd
Pet	" "	Benjamin L. Atwater
Say When	" "	Irving T. Brown
Daisy	" "	George W. Bray
Jack Frost	" "	William Bruxton
Imp	" "	Captain Price
X L N C	" "	Senator Stevens

The hulls of ice boats consist of two crossed planks in plan like the letter "T", or a cross; the longer being the keel, and the shorter cross one the runner plank, and beneath each end of the latter shoes shod with steel runners are fastened to make the bearing on the ice. The balance of the triangle is supported above the ice by the rudder, which is located under the after end of the keel. Surmounting the keel, and nearly over the rudder, is a lightly built oval enclosure which constitutes the cockpit. The forward extended end of the keel corresponds to the bowsprit of a sloop and takes care of head-stay and all forward rigging. The shrouds are carried from the top of the mast to the outer end of the runner plank. The span of the runner plank gives a good angle to the shrouds, making a fine support for the mast.

The sails cover all well-known, single stick plans, and among them are to be found lateen, sprit, lugger, leg-of-mutton, gaff, both cat and sloop rig, and lastly the Marconi-shaped sail, which has produced more speed than any of the others.

A sailor experimenting with an ice boat should do well if he has had previous experience sailing a water boat, although he will, when applying this knowledge, have to unlearn more than he will have to learn. The following examples give a few of the reasons why this is so: Ice boats are brought to a standstill by throwing them swiftly up into the wind, getting them "in the stays", as it were, and then anchoring them in this position by

putting the rudder across the boat. Sailing before the wind is impossible, in a sense, because the boat in response to each puff runs away from the wind with a consequent flapping of the sail over the helmsman's head, while the boat apparently reduces its speed awaiting another push from the wind. Therefore, before the wind "tacking" is necessary, that is, the wind must be taken over the after quarter and the course laid about 150 degrees to the wind, making a jib necessary at the end of each leg of the leeward course. Furthermore, ice boats are always sailed with sails trimmed reasonably close, because if sails are allowed to go out as far as is usually done in fair wind sailing, the boat is likely to "crab" sideways, slip on the ice, and lose forward momentum.

In addition, ice boats are lined up at a starting of a race and are held still awaiting the starting gun. The crew consists generally of two people, and because they can go overboard at will, they wear shoes with steel creepers to facilitate pushing the boat in getting started or in getting out of a calm place. It is a usual sight to see both of the crew overboard, bent over like hairpins, running and pushing the boat in order to get some advantage over a competitor, or to improve their windward position.

For all those that think water sailing is a strenuous game, the writer advises ice yachting as the quickest means to change their minds. When sailing, the helmsman is fixed in his position in the cockpit, but when the windward end of the runner plank shows a tendency to rise in the air, the sheet tender is moved out to this windward position. A good puff of wind will make the rise of the plank end six feet or more above the ice and when this happens if the sheet is "let go" too fast or the helmsman rounds up the boat too suddenly, the ice boat immediately seeks an even keel and somebody is terribly jarred when the windward runner hits the ice. It is to be noted that during a strong puff of wind the leeward side of the boat has nowhere to go, as in a regular yacht, so consequently the windward side must rise and sometimes does rise to a point that strikes terror to those that are sailing and those watching.

In no way is ice boating a child's game, or a timid person's recreation. The great speed attained by the boats is, of course,

ONE ICE BOAT AND FIVE SCOOTERS

It is impossible to say whether the five amphibians in the picture are in water or on ice

the most striking phenomenon of this little-known sport. In order to put before the readers a good description of how this speed is obtained, the writer, like all others writing of boats and their performances, is forced to quote constantly the great authority, Dixon Kemp, who writes on this subject as follows:

"An elucidation of the phenomenon of a vessel sailing faster than the wind has frequently been attempted, but up to the time when this was written, in 1879, with no clear conception of the mechanical principles involved. In the first place, it must be distinctly understood that a boat's speed before a wind which blows with a constant velocity cannot equal the speed of the wind; under different conditions it is conceivable, and in accordance with mechanical principles, that the speed of a boat may equal, and greatly exceed, that of the wind. If the boat were before a wind which is travelling at the rate of thirty sea miles an hour, the direct impulse of the wind on the sails, if *fixtures*, would be equal to six pounds per square foot. But the sails are not fixtures, and move before, or away from, the wind; the pressure is thereby gradually diminished until it is balanced by the resistance met with by the boat on the ice. As the resistance of an ice boat is very small, a high speed—nearly equal to that of the wind—is reached before the resistance and the wind pressure become uniform. Thus, say the velocity of the wind were thirty miles an hour, and the speed of the boat twenty miles an hour, the resultant pressure of the wind would be only of that due to a wind speed of ten miles, or about 2/3 lb. per square foot. But if the wind makes a more or less acute angle with the line of advance, the conditions are entirely altered; the pressure of the wind does not diminish with the advance of the boat, and its effective impulse is determinable on mechanical principles, which will admit as possible a speed of the boat much greater than the actual speed of the wind. However it is scarcely possible that any water-borne boat propelled by sails could ever be made to exceed the speed of the wind which impelled it, on account of the enormous growth of the resistance due to wave-making; but 'ice boats' may be regarded as having almost no head resistance; the slightest force will give them motion, and keep them in motion. The

only friction is from the lee runner, as when sailing the weather runner seldom touches the ice, and the lee runner, cutting into the ice, prevents excessive leeway.

" To illustrate the principles involved, it will be assumed as a fact that ice boats in America have been timed to sail at the rate of one mile in a minute by the aid of a force due to a velocity of thirty sea miles an hour of the wind. Such a wind force is termed a 'fresh gale' by sailors, and a ship would be under reefed topsails, reefed courses, or possibly fore and mizzen topsails furled."

Anyone wishing to go further into this matter of speed, will do well to study more fully Kemp's detailed statements and drawings (pages 412–514 of the 1886 edition).

It would not be proper to close this short paper on Ice Boats without making some mention of one of the class's interesting developments—the scooter. These little hulls resemble turtles in appearance and are more or less like Barnegat Bay sneak boxes in plan and construction, with the addition of steel runners. They are really the amphibians of ice boats as they sail with equal facility over the frozen stretches and over the open sections of water, that ordinarily to ice boats present the greatest menace.

GREAT SOUTH BAY SHORE BIRDS

By William A. Gill

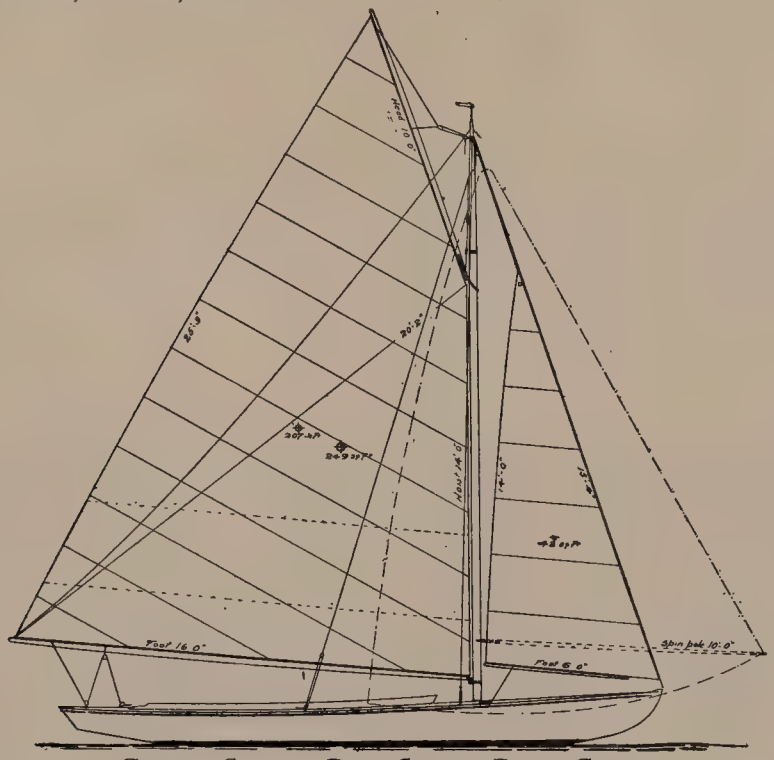
LONG ISLAND, New York, is a large island dividing Long Island Sound from the ocean, and is peopled mostly by summer residents who live in its many beautiful resorts. Along the island's southeast shore we find the shallow waters of Great South Bay, which is connected by inlets in several places with the ocean. The character of the water on the bay is very similar to that of Barnegat Bay, located along the eastern shore of the state of New Jersey. Although the waters of these two bays resemble each other, the boats in use do not, and among those peculiar to Great South Bay we have the Shore Bird class.

These graceful little sloops, named after bay birds such as Kingfisher, Red Wing, Blue Wing, etc., were designed by Charles D. Mower, and sturdily built on the following abbreviated specifications:

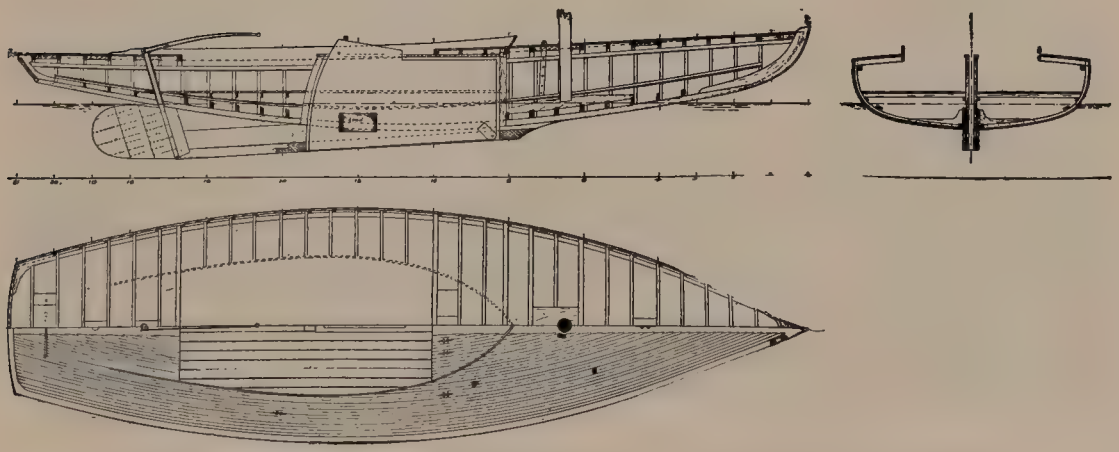
> Keel, white oak; frames, sawed hackmatack one-inch square; planking on sides, 5/8-inch cedar; on deck, 5/8-inch light mahogany; deck plank, plank-sheer and combings, dark mahogany; deck seams filled with white lead; capped centreboard trunk; mahogany transom; bronze fittings, chocks, cleats and blocks; gooseneck and brass rudder post; spruce spars.
>
> Ballast, 350 pounds of lead on keel.
>
> Finish, decks, combings and transom bright and varnished, sides painted white with gold line stripe.

GREAT SOUTH BAY SHORE BIRDS

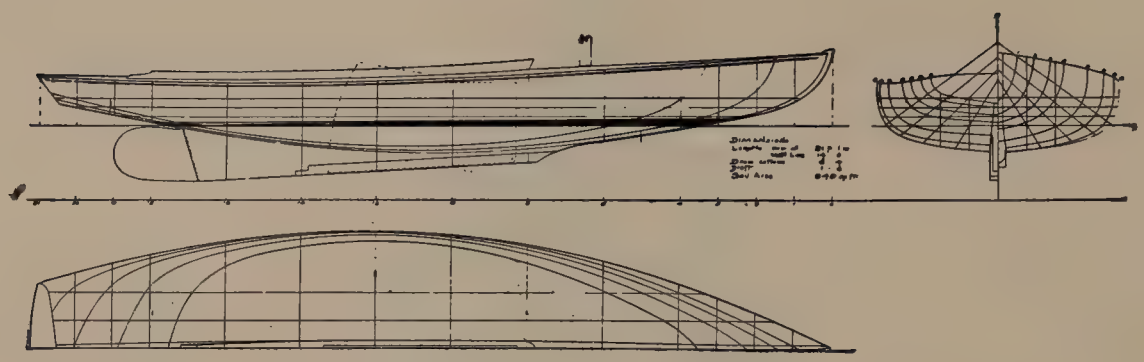
Dimensions:—
Length overall, 21 feet, 1 inch.
Length waterline, 14 feet, 0 inches.
Beam extreme, 6 feet, 4 inches.
Draft, 1 foot, 6 inches.



GREAT SOUTH BAY SHORE BIRD CLASS
Designed by Charles D. Mower



ARRANGEMENT PLAN—GREAT SOUTH BAY SHORE BIRD CLASS
Designed by Charles D. Mower



LINES—GREAT SOUTH BAY SHORE BIRD CLASS
Designed by Charles D. Mower

Photo by Levick

GREAT SOUTH BAY SHORE BIRDS

The sails made by Everett Benjamin, are of 6 ounce good material. The boom is 16 feet; hoist 14 feet, gaft 10 feet; mainsail 209 square feet; jib 41 square feet, spinnaker rigged with 10-foot spinnaker pole.

Twenty of these boats were built during the winter of 1923–1924 by S. W. Newey of Brookhaven, Long Island, and were delivered in the spring of 1924, at the price of $490 complete.

Photo by Levick

GREAT SOUTH BAY SHORE BIRDS

Ten more were built in the winter of 1924–1925, and ten more in the winter of 1925–1926. They are sailed in the Great South Bay, Moriches Bay, Shinnecock Bay, and Mecox Bay. Regular races in this class are held by the Westhampton Yacht Club, the Shinnecock Bay Yacht Club, and the Mecox Bay Yacht Club. The class was started by W. A. Keyes, Jr., Quogue, Long Island, and Harry Growtage, East Moriches, Long Island.

Practically all the boats are today in commission, and giving good service to their owners, both young and old.

Photo by Levick

GREAT SOUTH BAY SHORE BIRDS

THE ALDEN "O" BOATS

By Dwight S. Simpson

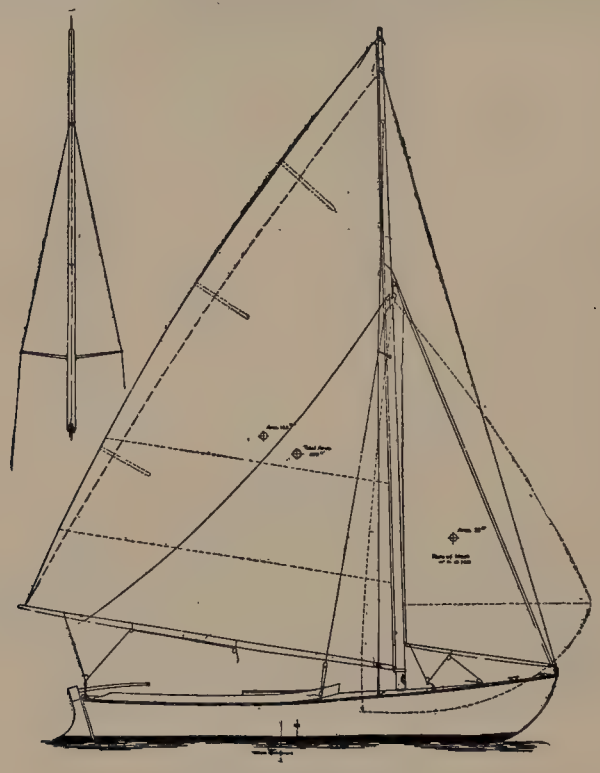
NOT long after the close of the Great War a feature common to all yacht clubs was the noticeable lack of youngsters except on the dancing floor. From a mere feature this soon grew into a matter of some concern and a subject for much talk and an occasional magazine article, and the concensus seemed to be that "something ought to be done about it."

In the belief that the lack of young sailors was due, in part at least, to the desire of the youngster to do something on his own rather than go through a long period of servitude as crew for his dad, a group of Marblehead yachtsmen came to the well known yacht designer, Mr. John G. Alden, in 1921, to discuss the possibility of a new kind of one-design class. This was to be a small and inexpensive knockabout, primarily intended to be owned and sailed by the younger element—of from twelve to eighteen years—but which at the same time would be comfortable and able enough to be used by the older ones in outside and rougher waters.

The prime necessity was to keep the price to as low a figure as possible and get a boat of a modern rig and type that was able to sail in rough water with comfort and safety—to reduce the worries of the "oldsters." After much discussion, a centre-board type was adopted, being a trifle cheaper to build, much cheaper to haul out and store, easier to ship; and, with an eye

to future development, it would be usable in many more localities than a keel boat—and with all this it requires more skill properly to race.

In order to get as much boat as possible a short bow overhang was adopted which with the outboard rudder gives a maximum waterline length. Keeping in mind that the new boat was to be a training ship rather than a pure racing machine, and knowing



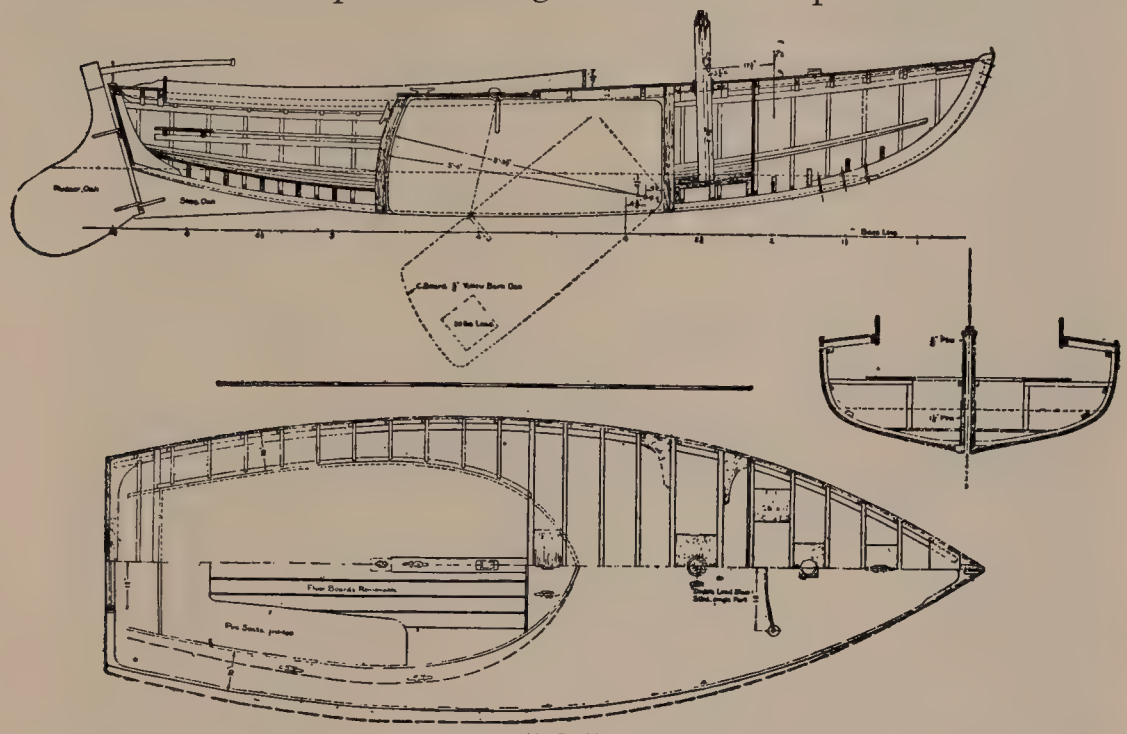
ALDEN "O" BOATS

Solid lines show No. 2 sail plan. Dotted lines show No. 1 sail plan. Jib and spinnaker are the same

the general discomfort and wetness of the (at that time) only well-known small racing class, the boat was given rather a high freeboard, especially at the bow, generous beam, and a deep cockpit in which the helmsman sits, dry and well protected. The boats were to be strongly built, with a bulkhead forward making a watertight compartment and keeping them unsinkable.

Ultimately two designs were prepared which have proved about equally popular, the chief differences being in beam, ballast and

sail-area. In some localities the Number 2 hull has been used with the Number 1 sail plan, making rather a more powerful boat.



ALDEN "O" BOATS

Solid lines show Design No. 1. Dotted lines show principal differences in Design No. 2

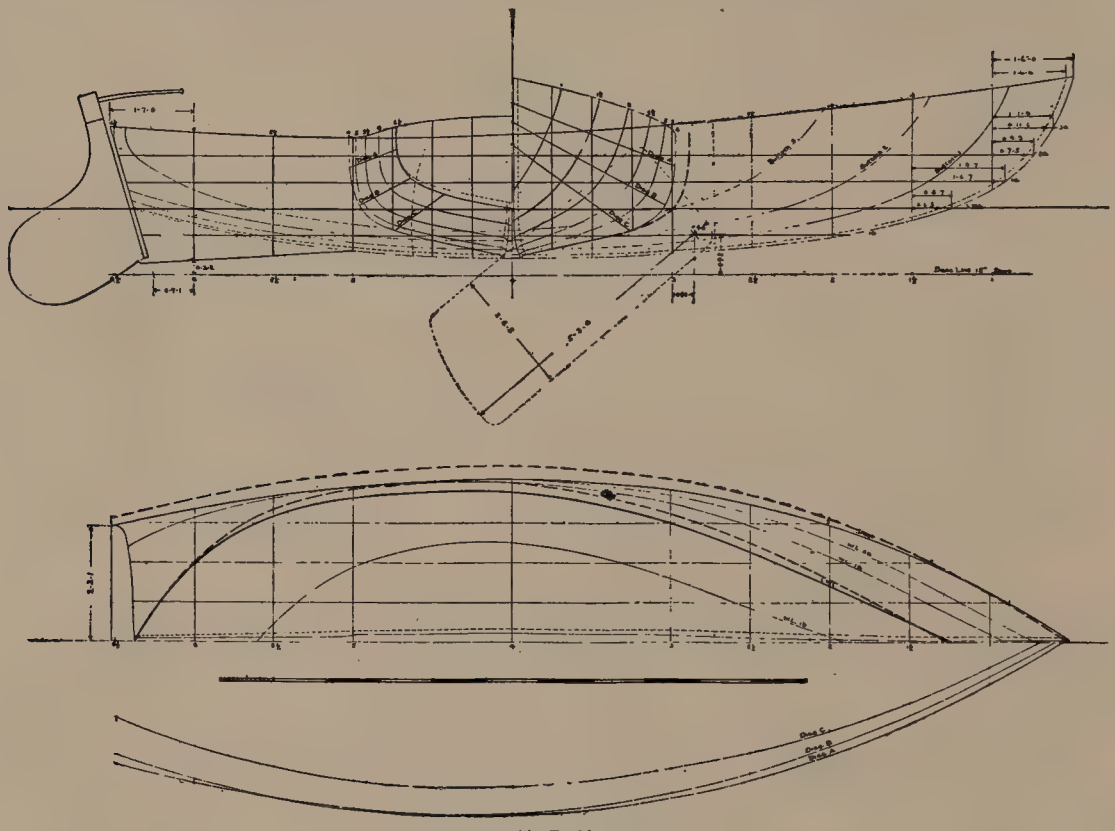
The general particulars of the two designs are as follows:

	No. 1	*No. 2*
Length Overall	18′ 3″	18′ 1″
Length Waterline	15′ 6″	15′ 5″
Beam Extreme	6′ 2″	6′ 8″
Beam Waterline	5′ 8½″	6′ 1″
Draft of Hull	0′ 11″	0′ 11½″
Sail-area	200 sq. ft.	192 sq. ft.
Inside Ballast	450 lbs.	550 lbs.
Total Weight of Boat	1,800 lbs.	2,000 lbs.

At this writing (December, 1927) the cost of the boats by any one of half a dozen builders is about $650, including lead ballast and a spinnaker.

A number of these boats (Design No. 1) were delivered at Marblehead in 1922, and so successful were they that the idea

spread rapidly. More than 200 boats have been built in the five years ensuing and about 18 have recently been ordered for 1928, showing that their popularity is not waning. In addition to this some 50 boats have been built from modified designs for the localities for which the original was thought not quite



ALDEN "O" BOATS

Solid lines show Design No. 1. Dotted lines show variations of Design No. 2

suitable. One or the other of the original designs, quite universally known as Alden "O" boats, are in use in the following waters:

Marblehead	Hingham
Cohasset	Southport
Watch Hill	Pequot
Cedarhurst	Lake St. Regis
Port Jefferson	Nonquit
Wellfleet	Northeast Harbor
Prout's Neck	South Boston

and numerous other localities from Nova Scotia to Honolulu.

Photo by Jackson

SCRAPPER

Presents a beautiful picture with a bit of picturesque background of Marblehead

In half a dozen clubs on Long Island Sound the Number 2 design is well-known and popular as the JA class. Variations designed to meet specific requirements are in use by the American Yacht Club, Charles River Basin, on the St. Lawrence, at Duxbury, and other places. It is fitting that the largest fleet is in the birthplace of the class, twenty-five starters being not an uncommon event at Marblehead, the number in other places varying from six to fifteen.

That the Alden "O" boats have served and are serving their purpose is evidenced by the fact that already some of Marblehead's best sailors are graduates of this class and that not only they but older yachtsmen and yachtswomen are still occasionally to be found in an "O" boat race. Also, it is not a rare thing to find them with their young owners on a cruise, snug in some harbor with a tent over the boom, or scooting down on the New England coast fifty or seventy miles from their home port. And so far with all this fleet, club racing, inter-club racing, and cruising through six seasons, we have heard of no casualties; wettings, and excitement to be sure, but nothing more serious.

Graduates of the class are successfully racing "R" and "Q" boats, have sailed in Bermuda races, and crossed the Atlantic. There are many of them, and they make a welcome addition to any sailing crew.

EDITOR'S NOTE.—Mr. Alden was born in 1884 at Troy N. Y. For many years he sailed small boats in waters adjacent to Sakonnet Point, near Newport, R. I., and had all the experience the rough waters and severe weather of that locality offered.

In 1899 he cruised single-handed in a small dory from Troy, N. Y., to Sakonnet, a distance of three hundred miles.

Mr. Alden, in addition to his sailing experience, has had a wonderful career in boat architecture. Starting with B. B. Crowninshield of Boston and later with his present associates, Dwight S. Simpson and Charles G. MacGregor, Mr. Alden has designed over 600 boats varying in size from the three-masted schooner Priscilla Alden, now on a round-the-world cruise, as a yacht, down to various small one-design classes fourteen feet in length.

Among the most successful boats designed are the following:

125-foot overall steel schooner Starling, 1926.
110-foot overall schooner Seaward, 1921.
90-foot overall schooner Seadrift, 1924.
80-foot overall schooner Ungava, 1926.
80-foot overall schooner Hardi Biaou, 1926.

The well-known schooners Malabar I to VIII, twice winners of the Bermuda Race.

Fast Class " R " boats Vitesse, Scorpion and Calypso, and many others, including the new Malabar IX, specially designed for the next Bermuda race.

Mr. Alden as a deep-water sailor has participated in many ocean races.

HISTORY OF THE VICTORY CLASS

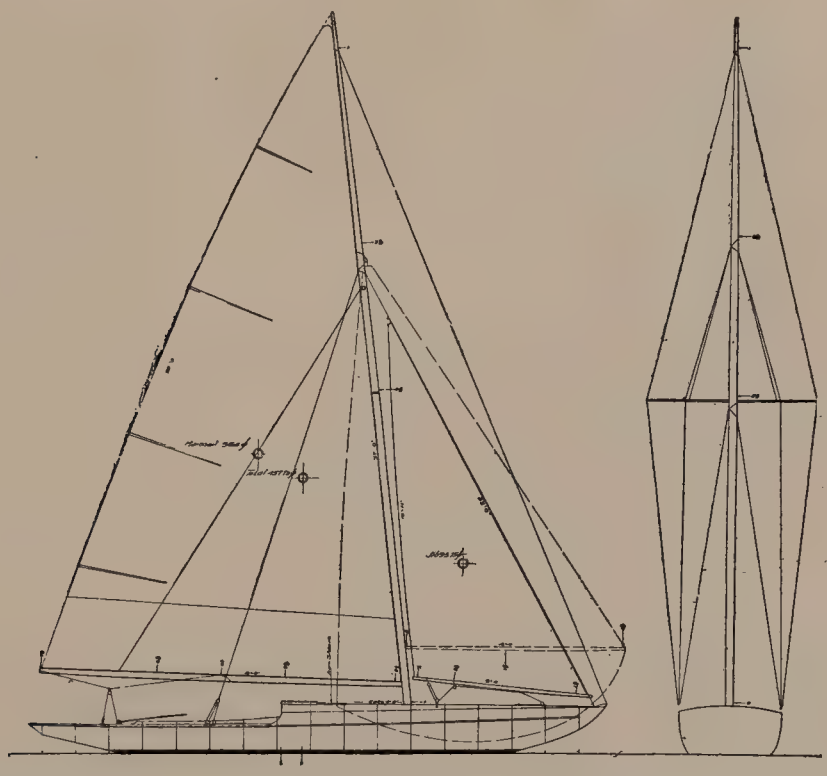
By T. S. Clark

IMMEDIATELY after the World War yachting on the sound was in a rather chaotic condition, as most of the open and one-design classes had been disbanded and the survivors had turned to the Handicap Classes in order to continue their racing. It was imperative, therefore, that something be done, and done quickly, to inaugurate a revival of yacht racing. With this in mind a group of yachtsmen, headed by Junius Morgan and Commodore James B. Ford of the Larchmont Yacht Club, got together during the fall of the year 1919 and decided to build a class of one-design boats that would not be too large or too expensive for the average yachtsman to maintain. The result was the formation of the now well-known and justly famous Victory Class.

The design was from the board of the well-known naval architect, William Gardner, by whom no worthless boat was ever designed. The builder was Henry B. Nevins, of City Island, who is probably one of the best known yacht builders in the country today. The general measurements are: 31 feet, 6 inches overall; 20 feet, 10 inches waterline length; 7 feet beam; 4 feet, 10 inches draught. The hull is planked above and below the waterline with 5/8 inches cedar, except for the garboard and sheer strake which are both yellow pine. The ballast consists of 2,900 pounds of lead, all on the keel, without inside ballast. The

displacement is 5,885 pounds or 92 cubic feet. The mast is straight and solid in construction and rakes aft, from the deck, an even 4 feet. In order to stay the stick properly, it was decided to use only one set of spreaders, having a total width of about 8 feet.

This rig has proven eminently successful as attested by the loss of only one mast in eight years of racing; and that was caused by an unexpected jibe in a hard breeze.



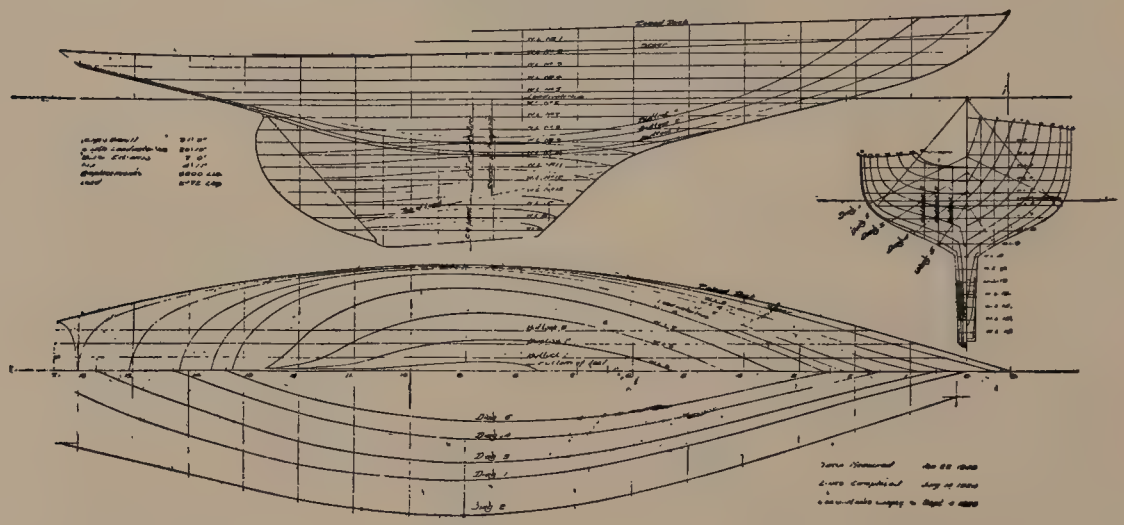
VICTORY CLASS—SAIL PLAN AS DESIGNED BY HENRY M. DEVEREAUX FOR YACHT GOPHER

The measured sail-area is 433 feet divided into 340 square feet in the mainsail and 93 square feet in the jib. Both jib and mainsail trim from travelers, which is a decided advantage when tacking. The light sails are limited to a spinnaker, which can be used as a balloon jib by trimming outside the lee shrouds.

The cockpit is about 8 feet long and is self-bailing, and the forward deck is raised, thus forming a small cabin which is large enough for two people on short cruises. While designed primarily

for racing and afternoon sailing, several of the boats have done some cruising; and one, the Flapper, has twice made the long voyage from Larchmont to Bar Harbor, Maine, which is a good test for any boat and an especially real one for a 31-foot racing yacht.

The name "Victory Class" was selected for these boats as a tribute to yachtsmen who participated in the World War and, by their efforts, helped to make victory the result.



LINES OF VICTORY CLASS—SLOOP GOPHER—BUILT FOR WALTER R. EIMER
Designed by Henry M. Devereaux

To promote still further this idea, all the boats were originally named after some phase or part of the great struggle.

It is interesting to record the names of the original owners, and the past and present names of the different boats.

Original Name of Boat	*Original Owner*	*Present Name of Boat*
1. Ace	H. Curry	Madelon
2. Alerte	R. Martin	Same
3. Blue Devil	H. Whitney	"
4. Buddy	C. Alker	"
5. Spad	H. Pratt	"
6. Soixante Quinze	W. Stewart	Avanti
7. Blue Jacket	J. B. Ford	Same
8. Nieuport	L. Brown	"
9. A. E. F.	Potter	Zora II

Victory Boat Pushing a Nice Wave to Leeward

Original Name of Boat	*Original Owner*	*Present Name of Boat*
10. Ontranto	R. B. Meyer	Same
11. Arethusa	C. D. Norton	"
12. Naviator	F. T. Davison	"
13. Bois de Bellau	Com. J. B. Mayer	Nike
14. Mongolia	H. M. Curtis	Vindictive
15. Contigny	C. L. Atkinson	Reveille
16. Black Jack	H. Morgan	Same
17. Mary Rose	H. Morgan	Flapper
18. Gopher	J. Hines	Gopher
19. Carry-on	H. S. Shonnard	Same
20. Briquette	J. Pratt	"

There have been a number of changes in ownership since the class first started. In 1923 there were four boats sold out of the class to Buffalo, namely: the Buddy, Briquette, Alerte, and Ontranto. The latter, we are happy to say, has been brought back to Long Island Sound, but the Alerte and the Briquette have again been sold and have gone further west, and the Buddy is now at Syracuse. The Spad and the Blue Devil were subsequently sold for use at Houston, Texas, and the Madelon and the Nieuport confine their sailing to the eastern part of Long Island Sound.

This leaves us twelve boats in the class, all of which were actively engaged in racing during the past summer. As compared with the sixteen boats which raced in 1920, the turnout of twelve boats in 1927 (eight years later) is certainly an enviable one.

The complete racing record of the class is as follows:

1920	Championship won by	Alerte
	1 Series "	" "
	2 " "	" "
1921	Championship won by	Alerte
	1 Series "	" Mongolia
	2 " "	" Alerte
1922	Championship won by	N. A. R.
	1 Series "	" Spad
	2 " "	" Madelon and Blue Jacket
	3 " "	" N. A. R.

1923	Championship won by	Blue Jacket	
	1 Series	"	" Blue Jacket
	2 "	"	" Bois de Bellau
	3 "	"	" Blue Jacket
1924	Championship won by	Blue Jacket	
	1 Series	"	" " "
	2 "	"	" " "
	3 "	"	" Reveille
1925	Championship won by	Blue Jacket	
	1 Series	"	" " "
	2 "	"	" " "
	3 "	"	" " "
1926	Championship won by	Black Jack	
	1 "	"	" Gopher
	2 "	"	" Black Jack
	3 "	"	" " "
1927	Championship won by	Black Jack	
	1 Series	"	" " "
	2 "	"	" " "
	3 "	"	" " "

The Victory Class also sent a team to Buffalo to compete with the Victory crews on the Lakes and won the match handily.

The following year the Buffalo Yachtsmen came east and were again defeated in a most interesting team race held off Larchmont.

Out of the original twenty boats the Blue Jacket, owned by Commodore Ford, has the unique distinction of having raced eight years under the same ownership. The Gopher, Vindictive, and Black Jack are next in line, with five years to their credit, while the balance of the yachts have changed ownership more often.

Mr. Howard Curry holds still another record, that of having owned five Victory boats at different times.

The excellent sailing qualities of these sloops under all weather conditions, and the enthusiasm displayed by the boat owners, have been the determining factors in the success of the class.

VICTORY BOATS HANDLE EASILY AND ARE FAST UNDER ALL CONDITIONS

The owners are greatly indebted to Mr. Junius Morgan for his splendid work in the formation of the Victory Class, to Mr. Donald Cowl for his splendid example of leadership in the organization of the Victory Class Association, to Commodore James B. Ford for his untiring loyalty, and to each and every member, both active and past, who has contributed to the success of the Victory Class.

DUTIES OF A REGATTA COMMITTEE

By Benjamin Adams

HAVE been asked to give my impressions and ideas of the equipment, mental, and physical, and of the trials and tribulations, of a regatta committee. My own experiences have been almost entirely with sailing craft and of such I write.

The Regatta Committee is to sailing racing what the umpire is to baseball; an indispensable part without which the game could not go on successfully. Hence the type of man serving on such a body must be carefully selected; not only for his complete knowledge of rules and regulations, but for his quick eye, keen judgment, and even temperament. The members must see and judge instantly, backed by a full knowledge of the rights and wrongs of the case, and must preserve their tempers through arguments, that often, regrettably, follow. Many a close decision must be made, ofttimes, involving the winning or losing of a coveted trophy. But the rules are so carefully drawn that there should be no room for doubt in the minds of those of the regatta committee watching the race. Furthermore, it is necessary to serve in wind and rain, in hot sun and cold northeaster; in fact, in any and all kinds of weather. Fascinating it is to a lover of the sport, but very exacting, withal, and a keen tax on time, energy, both mental and physical, and patience.

The duties of a Regatta Committee are usually clearly and well defined. They take entries, lay out courses, arrange all preliminaries, receive measurements and ratings to determine classification, handle all racing guns and signals, start and finish the races, follow and observe during the races, figure handicaps, handle and decide all protests, announce the winners, etc. The chairman of this committee should be, and usually is, a flag officer of the club holding the regatta. I shall attempt to cover briefly the various duties in the order in which they usually occur.

The taking of entries is usually about the first duty to be met with. The rules of some clubs call for entries to be made the evening before the race, while others allow entries up to within a short time of the preliminary gun.

The next duty to consider is the setting of the course. In some clubs, this is done the day before and in others the hour before the race. There is much to be said for either time. Many clubs have a regular course, usually a triangular one, and this is definitely fixed for the day—indeed ofttimes for the entire season, and irrespective of wind and weather.

I favor two types of courses. First, a triangle, as nearly equilateral as possible, with one side dead to windward; second, a straight course over and back and dead to windward. This latter is usually known as a "windward and leeward" course. Both courses allow for a dead beat into the wind. The triangle gives more reaching and is, perhaps, better when a wind shift is feared because of the possibility of the windward course being shifted from one leg to another. The "windward and leeward" course gives a better chance for a run home with all light sails set.

While discussing the courses, the importance of properly marking such courses must not be overlooked. All turning points should be marked by a keg or barrel, painted a conspicuous color (bright yellow is good), with the number painted on both sides in black letters not less than 15 inches high. While it is customary at some clubs to have a staff with a small flag on it fastened upright on the mark, I do not like this method because it increases the danger of a boat fouling. A boat's hull and spars may be perfectly clear of a buoy, but the sheet might catch on the upstanding spar, thus creating an undeserved foul. While it is generally assumed that the starting line should be at right angles to the first leg of the course, it is better to vary this somewhat as follows: With a windward start the starboard tack end should be slightly preferred so as to check, if possible, a boat's running down the line or attempting to cross on the port tack. With a reaching start the leeward end would be best and the line should be at a fifteen to thirty degree angle to first leg of course. The

finish line should always be, as nearly as possible, at right angles to the last leg.

With further reference to courses, no Regatta Committee should start any race without placing in the hands of every skipper entered a course sheet showing clearly the course to be sailed (diagram or map if possible), with the location and marking of all buoys or marks and the mileage between. It should also give the times of the preliminary and starting guns for the class in question, with the designation of that class. No verbal instructions should be issued.

After the start of any race, no change should be made in the course set. Instances have occurred where the wind had dropped during the race showing the possibility of a long drawn out finish. In such cases, some committees send out verbal instructions to each skipper to omit such a leg, or to cut out such a buoy. This practice is bad and should not be used. A race once started over a given course should finish over that same course. It is wise, however, to put a time limit beforehand on every course and have it clearly understood that unless one boat finished within that limit, the race is to be declared off and is to be resailed.

The starting of a race is, perhaps, next to the finish, the most important function of a Regatta Committee. There are two kinds of starts, a timed start and a flying or one-gun start. The former consists in taking the time of each boat as it crosses the starting line with the proviso that all boats must cross within a given time of the starting gun, usually five minutes. The latter takes the starting time of all boats at the starting gun, thus giving the advantage to the boats crossing first. The timed start is now practically obsolete, much to the joy of the Regatta Committee. One can readily imagine the trouble it is to catch the times of fifteen or twenty boats all crossing the line within a minute or two of each other. Of course, preliminary guns are used in both kinds of starts.

Some committees use three guns at a start; a warning, a preliminary, and a starting gun. The intervals between guns vary. If a warning gun is used, it is recommended that it be fired fifteen minutes before the start, with the preliminary gun three (some

prefer five) minutes before the start. If several classes are sailing in sequence, the warning gun should be omitted to avoid confusion.

Starting signals should be also used with the guns. With us on Barnegat Bay, the signal is the actual sign, the gun serving only to call attention to the signal. The signals used by the Barnegat Bay Yacht Racing Association are a black cone or ball with the preliminary gun and a red cone or ball with the starting gun.

If any boat crosses the line before the starting signal and gun, she should immediately be recalled by signal or by a fast power-boat if necessary. A boat is considered across the line, start or finish, when the foremast on a schooner and the mainsail on a Cat, Sloop or Yawl or Ketch crosses the line. The bow is not recommended as it is too difficult to observe, and furthermore, the main driving power is through the mast.

After the race is under way, it is the duty of the Regatta Committee to police the course and observe the different racers as much as possible. As the principal danger of fouls is at the rounding of the various marks or buoys, the committee should station an observer at each mark. In some of the larger races, an official observer is carried on each boat racing, his duty being to report at the end of the race any infraction of the rules. This means so much "dead wood" on each boat and is not recommended, if avoidance is possible. Experience has shown that there is not so much danger of a fouling boat failing to report its error as there is of the boat fouled attempting to protect its opponent by trying to cover up the foul. It is to be remembered that a boat in one class can foul a boat in another class racing at the same time. Some skippers seem to feel that all other classes are outside the pale and will crowd a smaller boat of another class, where they would not think of doing it with a boat in their own class.

The finish of a race, of course, requires careful attention on the part of the Regatta Committee; this being especially true where two or more boats are finishing close together. As stated before, the mast of the boat should be taken for the determining factor. The observer noting the finish should keep his eye glued

to the line, whatever marks establish it, and call the time the second the mast touches this line. The time of finish should at once be recorded on the sheet and the time elapsed and time corrected, if a handicap race, figured as soon as possible. To avoid errors, all figures should be checked by a second member of the committee and the corrected and final results should then be signed by the chairman to certify to their correctness and approval.

The subject of protests is one that the Regatta Committee dreads. In the larger races, sailed, for example, under the direction of the New York Yacht Club, the desire on the part of any skipper to protest any other boat is indicated at once and during the race, by the hoisting of a special designated code-flag, usually code letter B. In the average race, however, the general rule is that a written protest signed by the skipper be submitted, within an hour of the finish of the race. Nine out of ten protests can be heard and a decision given within an hour or two after the finish. Thus the results can be announced and the winner declared without waiting another day or two.

Whatever system is used a protest should be submitted in writing, signed by the skipper protesting, and no protest should be considered when made by any other member of the crew. Any foul observed by committee members should be reported and acted upon irrespective of whether a racing skipper reports it or not. Fouls are of two general kinds, intentional and unintentional. In judging a protest it is, perhaps, needless to state that the Regatta Committee, sitting as a jury with its chairman as presiding judge, should hear all possible evidence on both sides, calling in such witnesses as they may feel can throw any light on the subject and basing their decision on this evidence and also on what their own observers may have reported.

It is obvious that in a well functioning committee each member should have his own particular position and should attend strictly to the duties belonging to such an assignment. It should be seen that all arrangements possible have been made and that everyone knows the exact duties assigned to him. All entry sheets should be prepared as much as possible in advance.

To start a race properly, four men should be assigned; one to handle the signals, one on the gun, one on the line and one holding the watch and calling the time. In timing the start, the use of an ordinary chronometer with an accurate second hand is recommended. The time keeper keeps his associates informed as to the exact time, and, before a gun counts seconds from five,—thus: 5–4–3–2–1–fire! The gun and signals are worked on the word "fire". There is no objection to the giving of information as to the exact time before the preliminary gun. After this gun, and before the starting gun, absolutely no information as to time should be given out, and committees should be most careful not to betray the time of the starting gun by any action in preparation to fire!

At the finish the duties vary a little. The time keeper's duties are the same, except that he starts to count actual seconds when any boat is near the finish line and keeps counting until the boat crosses. It is not for him to say what boat it is; that belongs to someone else. A second man is the linesman, and he simply calls "time" when a boat crosses, but does not necessarily know what boat or when. A third man notes the order of finish by name or numbers. A fourth man records the hours, minutes, and seconds, every time the second man calls "time", getting this from the count of the time keeper. The combination of the four different men gives an accurate finish. This is necessary, especially where several boats finish close together.

Their final duties are now the figuring of the results with their careful checking, and the report of the finish to the proper official or committee.

The foregoing article is an attempt to explain a practical system of handling sailing regattas in the field, or rather on the water. It is based on the writer's experience over many years with as many as eight classes in one day, often five at one time and in all kinds of wind and weather. The system requires men, not machines, but men who will give of their time and energy through a love of the sport; for what finer sport and what better sportsmanship is there than that of sailing?

SALTY TALK

By Edwin J. Schoettle

A NEW YORK business man who was going stale through overwork was urged by a friend to take up golf.

"I simply wouldn't have the time," said he, promptly.

"Nonsense! George; there are lots of golf courses within easy reach of your office. Suppose you join one and arrange to go out, say, twice a week, knocking off work at 2 or 3 o'clock. That wouldn't take much of your time, and then—"

"Oh, I suppose I could get to *play* the game," George interrupted, "but I couldn't spare the time to talk about it afterward."

No yachtsman has any license to laugh at that too heartily, for it must be admitted that conversation is an important part of yachting. It must always have been so.

It is of record that when the Water Club of the Harbor of Cork was organized, 'way back in 1720, one of the first parliamentary actions of that early yachting institution was the adoption of this inhibition: "Resolved that such members as shall talk of sailing after dinner to be fined a bumper".

If that primitive prohibition act was strictly enforced, the result must have been complete silence in the clubhouse after dinner—or a prodigious number of bumpers.

The early afternoon train on summer Saturdays that runs from every big city in the east to the near by yachting centres is always full of amateur sailors and their salty talk. Wherever two or more devotees assemble, afloat or ashore, there must be conversation. We may imagine that the Vikings, leathery old sea dogs as we suppose they were, wasted few words at any time, but the amateur sailor is a different creature. He must talk or explode—and sometimes he does both.

The writer of this trivial paper is no exception to the talkative

type, but it was his rare privilege once to be a silent listener-in upon a windy dialogue going on within a few feet of him, and the experience was so unusual it gave him a mischievous idea. He made it his deliberate business to set down the dialogue verbatim, so that he might later lay it before the participants, and show them how futile and funny amateur sailor-talk sometimes sounds.

We are aboard the yacht Windjammer, homeward-bound from the Bermuda race of 1926. The good little ship is staggering along in the centre of the Gulf Stream, somewhere near the southwest corner of Latitude 36 and Longitude 71.

It is a dark night, with strong stormy winds accompanied by rain from the southwest. The course is about northwest, and Windjammer's sails are reduced to jib and double reefed mainsail. Skipper, Becky, and Bruce are on watch—9.00 P. M. to midnight. The balance of the crew are below making the best of an endeavor to obtain a little well earned sleep and rest.

The cabin floor is strewn with broken glass, broken furniture, wet raincoats, underwear, and other wearing apparel. In addition to these few irregularities, not proper in a well-kept cabin, the floor is slippery with linoleum wet with salt water. There are evidences of strawberry jelly, marmalade, catsup, Bass's ale, condensed milk, and granulated sugar. All these things are where they do not belong, because of various spills that had taken place in the cabin when the Windjammer occasionally, with lightning-like rapidity, jumped from the north side of a Gulf Stream wave to the south side of another about five waves distant.

All this description is in no way a reflection upon our cook. He, during the time of this narrative, was stripped to the waist, asleep in his bunk, his hairy chest expanding and contracting with each pitch of the boat, and his gentle breathing making a noise in his throat similar to an underwriter's foghorn. At one tremendous jump of the boat that opened all locker doors in the galley and pitched all china and canned goods on the floor, the recumbent figure of the cook slowly rose to a sitting posture. "That's my job; to clean up", he murmured, and promptly fell back to the arms of Morpheus, and dead heaving and snoring slumber.

Nearby, in bunk No. 3, the writer proceeded to set down as accurately as possible the disjointed conversation that came to him from the cockpit through the howling wind and spray:

"Hear the wind harp." "What?" "Hear the wind harp." "I can't hear what you say." "Hear the wind harp." "What?" "Ain't it blowing like hell?" "Sure." "What's in that cloud in the northeast?" "I can't hear you." "What's in that cloud in the northeast?" "Oh, now I hear; that cloud's gone over our heads." . . . "I'm getting bleary-eyed at this wheel; the binnacle light dazzles me." "What?" "Ask Schoettle to put out that light in his berth." "What didja say; I can't hear you?" "Oh, it's all right now, the other light doesn't shine in my eyes." "Why didn't you tell me you were talking about the light?" "Schoettle, put out that light!" "Ain't it dark? Suppose someone would fall overboard. Where is the life preserver?" "What?" "Where's the life ring?" "Oh, that's on the deck near the traveler. I didn't know what kind of a preserver you were talking about." "Where are the flares?" "What?" "Where are the flares?" "In the engine room. What do you want them for? We are not shipwrecked or going over the finishing line." "I didn't mean that kind of a flare." "What did you mean?" "Haven't you a kind of a tin can that fastens to a life preserver, so at night if someone falls overboard you pull the top off the can and the action of water on the can contents makes a light that makes it possible to locate the man overboard?" "What didja say? The wind was blowing so hard and I was watching the mainmast." "What's the course?" "What?" "What course you steering now? Your sail's flapping." "Sure it is, what else can I do at the wheel? First it blows hard, and then there's no wind at all." "What?" "Say, where did you say that can was?" "What?" "Where is the can?" "Oh, I know what you mean, it's in the cabin." "What cabin?" "What course you steering now?" "That's a black bugger to the southwest. Don't you think we had better call the balance of the crew out." "I want that can." "How could you save a man by throwing a life preserver after him, and then spending five minutes looking for the can? That can should be tied to the life preserver." "What's

the use talking to me? I can't hear a word you say." "Well, I want to know where the can is."

The chronicler of this dialogue sings out from bunk No. 3: "The can is in the skipper's room, on the shelf." Becky, a large body in hip boots and oilskin coat (bought especially for use on horse-back rides in Montana), descends the companionway, falls over the occupant of bunk No. 3, wends his way slowly and laboriously to the skipper's cabin, and falls headlong over berths occupied by the skipper's sons, but emerges triumphantly with the can.

"Give me a stop." "What?" "Give me a stop." "What?" "Where can I find a short piece of rope?" "What for?" "To tie the life preserver to the can." "What's the use of doing that?" "Suppose someone falls overboard." "If anyone does it would be better not to try to save him, because he would drown anyway. A quick death would be a relief, because he would drown anyway." "Now the can's tied to the life ring. If I fall overboard do you know how to save me?" "I wouldn't even try; it wouldn't be worth while." "Anyway the can is where it belongs." "Say, Becky, would you like to take the wheel? I can't see anymore." "I was wondering what was the matter with you." "Is there a bottle of Poland water out here?" "What?" "Where is the Poland water?" "I threw it away, it was empty." "Be careful about stepping on those bottles or you'll take a spill." "Are there some oranges here?" "What? Oh, yes, they're in the galley. Be careful when you go for them that you don't stumble over the boots and coats and cut yourself on the broken china and glass." "Where is Bruce?" "What?" "Did you see Bruce?" "I can't hear what you say." "Is Bruce overboard?" "No, he has cut his foot." "What?" "Bruce's foot is bleeding." "How did he do that?" "He cut his foot on the broken glass." "Who broke the glass?" "What does the barometer read?" "It's falling." "I know, but it must fall sharply to mean anything." "Bruce cut his foot." "That's the cook's fault for not cleaning the galley." "Bruce should not have gone down in his bare feet." "I know, but he's cut his foot." "Gee, it's a rotten night. When does the next watch come out?" "What?" "When

do we go off watch?" "Oh, 12 o'clock midnight." "I know, but when we do come on again." "What's the use of worrying about when we come on again? Wake up the other shift; they have had plenty of sleep."

The occupant of berth No. 3 was rudely greeted with the remark: "You're lucky to have had these three hours sleep. Get up and watch that course. It's a fine night except there's a bad storm coming from the south. It's black as Hades to the north. It's raining, and the moon is an hour late getting up. I wonder what's the matter with the moon. Come on, Becky, let's go to bed."

Three dark, gum-booted figures emerge from the cabin and steal their ways to the various positions in the cockpit, and the new morning watch has begun.

And would you say that this was one of the "silent watches of the night"? Not at all. There is no such thing, among amateur yachtsmen, as a silent watch.

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